

1973

The effects of agricultural and trade policies on European economic integration

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**The effects of agricultural and trade policies
on European economic integration**

by

Emilios Pagoulatos

**A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of
the Requirements for the Degree of**

DOCTOR OF PHILOSOPHY

Major: Economics

Approved:

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In Charge of Major Work

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**Iowa State University
Ames, Iowa
1973**

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1. INTRODUCTION

The purpose of this study is to evaluate the effects of agricultural policies on trade within the context of European economic integration. More specifically it is an attempt to analyze the pattern of trade in temperate zone products¹ of the EEC and EFTA. Since for the EFTA group tariff reductions did not extend to agricultural products, we will only attempt to quantify the effects of the Common Agricultural Policy (CAP) on the pattern of trade in the EEC.

The study starts, in Chapter II, with a very brief outline of the various policy instruments and mechanisms which make up the CAP such as the variable import levy (the difference between the threshold price and the world price), and a comparison of the EEC agricultural policies with the policies of the United Kingdom, Ireland, Denmark and other EFTA countries.

Chapter III provides an analysis of the pattern of trade in temperate zone goods of the EEC and EFTA with the use of estimated world trade matrices for the years 1953, 1961 and 1969. In Chapter IV, after a concise summary of the major empirical findings in the literature concerning the effects of the CAP on EEC agriculture, we will study the trends of agricultural output, consumption and trade in the Common Market and we will

¹The temperate zone goods considered in this study, with the corresponding United Nations' Standard International Trade Classification number in parenthesis, include: Live animals (001), Meat and meat products (011), Dairy products (022, 023, 024), Eggs (025), Fish (031, 032), Wheat (041), Rice (042), Barley (043), Maize (044), Other cereals and preparations (045, 046, 047, 048), Fruits and vegetables (05), Feedstuffs (081), Hides, skins and furs (211, 212) and Wood, cork and pulp (241, 242, 243, 244, 251).

introduce a model, consisting of estimated import demand functions, that attempts to capture the "static" welfare effects of the CAP on EEC trade of temperate zone products.

Chapter V will attempt to provide some very tentative conclusions about the "dynamic" or resource allocation effects of the CAP on EEC economic growth. For this purpose we will estimate an agricultural sub-model for the EEC. Chapter VI will evaluate the economic consequences of the participation of the United Kingdom, Ireland and Denmark in the system of Common Market Agriculture. The final part of the study ends with some conclusions.

II. A COMPARISON OF AGRICULTURAL AND TRADE POLICIES IN THE EEC, THE UNITED KINGDOM, IRELAND AND OTHER EFTA COUNTRIES

A. EEC's Common Agricultural Policy¹

The Treaty establishing the European Economic Community was signed by representatives of Belgium, France, West Germany, Italy, Luxembourg and the Netherlands in Rome, in 1957 and came into effect on January 1, 1958. The EEC extends over a geographic area one-eighth of that of the United States, with a population of approximately 190 million. The European Economic Community, also known as the Common Market, has the primary function of achieving, as defined in Article 1 of the Treaty:

"...a harmonious development of the economy within the whole Community, a continuous and balanced expansion, increased economic stability, a more rapid improvement in living standards, and closer relations between the member countries."

In order to attain the above goals, an institutional framework has been created that made it possible to develop free intra-Community trade of both industrial and farm products as indicated by Article 9 of the Treaty of Rome:

"The Community shall be based upon a customs union covering the exchange of all goods and comprising both the prohibition, as between Member States, of customs duties on importation and exportation and all charges with equivalent effect and their adoption of a common customs tariff in their relations with third countries."

¹A more detailed description of the institutional arrangements of the CAP can be found in Riesenfeld (75), Marsh and Ritson (59), Warley (101), Berntson, Goolsby and Nohre (9). Numbers in brackets refer to references listed at the end of this study.

and as declared in Article 38:

"The Common Market shall extend to agriculture and trade in agricultural products..." and ... "The functioning and development of the Common Market in respect to agricultural products shall be accompanied by the establishment of a common agricultural policy among the Member States."

The main system of institutions laid down in the Treaty consists of 1) The Assembly, 2) The Council of Ministers, 3) The Commission, 4) The Court of Justice and 5) acting in a consultative capacity, the Economic and Social Committee. The Assembly or European Parliament consists of 142 members elected by the national Parliaments of the Member countries and can review and debate problems of the community. The Council of Ministers is made out of representatives from each government of the six, and serves the function of coordinating general economic policies of members and deciding important issues arising in establishing and maintaining the Community. The Commission of the EEC has nine members jointly appointed by the member-governments and is the administrative organ of the Community with the main task of recommending action to the Council of Ministers and formulating opinions and recommendations on matters within the scope of the Treaty. The Court of Justice is composed of seven judges appointed by agreement among the six governments and among its functions are to safeguard the law in the interpretation and application of the Treaty. Finally, the Economic and Social Committee consists of representatives of all sections of economic and social life in each of the six countries, and is appointed by the Council of Ministers. The Committee assists the Council of Ministers and the Commission in an advisory capacity, and has to be consulted in those cases specifically laid

down in the Treaty.

The European Economic Community took the form of an economic institution that has the characteristics of both a Customs Union and an Economic Union.² As indicated in the treaty, the basis of the EEC has been the gradual abolition of import or export duties or similar levies as well as all quantitative import restrictions between member countries and the introduction of a common external tariff on imports from non-Community countries.

While it has been possible by 1968 to create a common market in industrial commodities, by removing tariffs and quotas within the union, trade in agricultural products presented more complex problems. All the six country members of the EEC had engaged in the past in government intervention in the agricultural sector primarily because of the belief that agricultural markets, if left to themselves, would inevitably result in socially unacceptable incomes for the rural population. During the establishment of the Common Market, it was recognized that the functioning and growth of a common agricultural market, because of the determination of the member states to retain agricultural support, necessitated an agreement on a common agricultural policy.

²A Customs Union is a form of economic integration among nations that involves the suppression of discrimination in commodity movements within the union and the equalization of tariffs in trade with nonmember countries. A Common Market is a customs union where not only trade restrictions but also restrictions on factor movements among members are abolished. Finally, an Economic Union is a common market where there exists some degree of coordination of national economic policies.

The six countries which founded the European Economic Community in 1957, agreed at the outset on the need to establish a common policy for agriculture as well as a free intra-area trade in agricultural products, not only because of the necessity to eliminate the diversity of pre-EEC agricultural support systems of the individual members, but also because of the important position of agriculture in the economies of member countries. Agriculture in 1958 was accounting for about 8.8 percent of Gross Domestic Product of the EEC and employing about 22.7 percent of the Community labor force. By 1969 agriculture accounted for approximately 6.7 percent of GDP and employed about 13.8 percent of the EEC labor force.

Article 39 of the Treaty of Rome established as objectives of the common agricultural policy:

- "(a) to increase agricultural productivity by developing technical progress and by ensuring the rational development of agricultural production and the optimum utilization of the factors of production, particularly labor;
- (b) to ensure thereby a fair standard of living for the agricultural population, particularly by the increasing of the individual earnings of persons engaged in agriculture;
- (c) to stabilize markets;
- (d) to guarantee regular supplies; and
- (e) to ensure reasonable prices in supplies to consumers."

The actual task of agreeing on a common policy for agricultural products has been long and tortuous. In order to attain the above ends the EEC Council of Ministers agreed, on January 14, 1962, upon the fundamental outline of a time table to implement the CAP and established

basic market regulations for grains (except rice), poultry and eggs, pork, fruit and vegetables. In addition, the regulation governing the financing of the CAP was issued. On February 5, 1964, three more commodity groups (rice, beef and veal, milk and milk products) were covered by the Common Agricultural Policy, bringing thus the scope of the common agricultural market to about 85 percent of the total agricultural production of the six. Finally, agreement on the establishment of a common level of agricultural prices was reached in January, 1966 and was implemented for the majority of commodities on July 1, 1967.

B. The Principles and Mechanisms of the CAP

The Common Agricultural Policy attempts to assure the maintenance of high farm incomes through a complex framework of interrelated regulations, that differ from commodity to commodity, involving support prices fixed well above world market prices, variable levies on imported agricultural products from extra-EEC sources and the granting of export subsidies (or "restitutions"), enabling certain Common Market goods to compete in the world market. These measures constitute the CAP's "market or price policy."

In addition to the market policy the CAP deals also with a "structural policy" which is concerned with the improvement and modernization of the Community's agricultural structures. It became apparent from the beginning that adjustments of markets, prices and trade policies could not alone achieve the objective of raising the standard of living and individual farm incomes, because they do not treat the fundamental causes which lead to inadequate incomes. In the field of agricultural structural

policy, the Community has coordinated the member states' structural policies and has participated in the financing of projects for the improvement of farm structures. So far no comprehensive common structural policy has been introduced in the Common Market.

The Regulations adopted in January, 1962, concerning the common organization of certain agricultural markets, were followed later in the year by a decision relating to the coordination of member states' structural policies. The principles of the structural policy can be summarized as follows:

- "(a) The Structural policy must be designed to remove the causes rather than to combat the effects of low farm incomes.
- (b) The aims of this policy should be to reorganize the bases of production and to achieve the best combination of the factors of production on all farms which can reasonably be expected to show a profit.
- (c) The policy should, therefore, be concerned with farms employing hired labor as well as with family farms and a full-scale reorganization of the technical and socio-economic infrastructure of rural areas."

More specifically, the objectives of an effective structural policy for agriculture should be centered in the consolidation of fragmented holdings and the enlargement of the average farm size, the encouragement of the out-mobility of labor from agriculture, the increase in efficiency of the marketing system for farm products and the improvement of farm management and technology.

Among the policy instruments that could be utilized in achieving the above objectives are grants for farm amalgamation and the provision of the improvement of fixed equipment, government purchases of nonviable holdings, and the provision of cheap credit for farmers that would participate in

supervised reorganization and intensification programs. Programs along these lines are already being pursued in the individual member states, though in none of them are the effort and resources employed commensurate with the reorganization needed.³

The establishment of a common agricultural market in the EEC with uniform artificially maintained price levels, would have not been feasible without an extensive subsidy and support system. The financment of these policy measures is provided by the Guarantee section of a Community fund, known as FEOGA (Fonds Européen d'Oriéntation et de Garantie Agricole - European Agricultural Guidance and Guarantee Fund). The Guidance section of the Fund finances expenditures by the Community on structural rural reforms, while the Guarantee section finances the EEC agricultural price policy. The FEOGA was created on January 14, 1962, when the first set of market regulations was agreed upon. The revenues of the FEOGA derive from contributions by member countries, from the yield of import levies and customs duties and, more recently, from the proceeds of a 1 percent value-added tax. The Fund has financed the Guarantee section more extensively than the Guidance section (about ten times more by the fiscal year 1969-70), reflecting the general attitude

³In December, 1968, Dr. Sicco Mansholt, the Commission vice president presented a new ten-year plan for EEC agriculture that shifts the emphasis of the CAP from price policy and market organization to a structural policy. It was realized in the plan that a policy that affects only prices and markets cannot achieve a fair standard of living for agricultural workers and eliminate the gap between rural and urban standards of living. The Mansholt plan aims at consolidating smaller, inefficient farms into large production units, pensioning off, by 1980, 2.5 million farmers and retraining for industrial occupations of 2.5 million others, and removing up to 12 million acres of land from cultivation. This plan was not implemented so far.

In the EEC of emphasizing market policies rather than structural reforms.

Regulation No. 25 that established the Fund assigned financial responsibility to it in three major areas of expenditures:

- a. restitutions in case of exports to non-Community countries,
- b. interventions needed for the elimination of surpluses, and
- c. grants needed for the attainment of the objectives of the CAP, including the financing of structural reforms.

Different methods have been used to calculate the contributions of individual member countries to the FEOGA.

Currently, the following shares apply for contributions to the Fund, which will prevail up to 1975:

Belgium	6.8%
France	32.6%
Germany	32.9%
Italy	20.2%
Luxembourg	0.2%
Netherlands	7.3%

Since the implementation of the CAP, FEOGA expenditures have risen very rapidly, from about 38 million U.S. dollars in the 1962-63 fiscal year to about 2.5 billion dollars in 1968-69. This last figure constituted approximately 1% of the combined GDP of all EEC countries. As can be seen below (9), the largest increase was registered by farm market-support expenditures that rose from \$6.5 million in 1962-63 to \$959.4 million in 1968-69. The total FEOGA expenditures, by section, over the 1962-63 - 1968-69 period were:

(million U.S. dollars)			
	1962-63	1965-66	1968-69
A. Guarantee Section	28.7	240.1	2009.7
1. Refunds for export subsidies	22.2	191.8	1050.3
2. Refunds for domestic market support	6.5	48.3	959.4
B. Guidance Section	9.1	80.1	258.0
C. Special Section	-	-	138.3
Total expenditures	37.8	320.2	2433.0

The primary reasons for the large increases in FEOPA expenditures over the period under consideration have been:

- (a) the increasing number of commodities under the CAP arrangements;
- (b) the higher support prices and higher export subsidies as a result of the widening gap between EEC and world market prices;
- (c) the growing surpluses of dairy products, sugar, soft wheat, barley, pork, poultry and certain fruits and vegetables; and
- (d) the significant rise in the share of farm-support expenses from about 17% of total expenditures in 1962-63 to about 40% in 1968-69.

By 1971, the total expenditures of the Fund for the year were around \$3,500 million, of which \$2,750 million were spent in the context of the Guarantee Section while \$750 million were allocated to the Guidance Section. This sum represents over 90% of the EEC's total 1971 budget of \$3,700 million. The largest share of the above expenditures went to finance domestic price support (\$1,270 million), while the share of export restitutions (\$980 million) declined slightly from previous years.

About 32% of the Fund expenditures for market intervention in 1968-69 were spent on dairy products, 26% were allocated for vegetable fats and oils, 22% for grains and 14% for sugar. Finally, 90% of the expenses for export subsidies were allocated to only three commodity groups. By far the largest share (43%) was spent on grains, while 31% went for dairy products and 16% for sugar.

C. The Market and Price Policy of the CAP

The market policy aspect of the CAP differs from commodity to commodity, but there are some common features that amount to the equilization of the effects of state intervention in the agricultural sector, by ensuring free access by all producers to all markets within the EEC, by establishing free factor movements within it, by operating a common system of protection against third countries and a common price and income policy for all individuals within the union.⁴ This common price and income policy for agriculture basically involves the establishment of a "variable levy" system of protection. The prices of agricultural products in the EEC are fixed within certain ranges and maintained by support buying and import controls. The basic instrument, with respect to the policy of markets, of the CAP is a community-wide price for selected commodities that is realized by a combination of variable levies and domestic support buying. The relevant producer price in this case is the established "threshold price" which is a type of minimum import price.

⁴Table 11.1 provides a summary of the market organization instruments of the CAP and the major agricultural support measures in the United Kingdom in 1969.

Table 11.1. Agricultural support instruments in the EEC and the United Kingdom, 1969^a

Instruments Commodities	EEC									
	Date CAP Introduced	Date of Common Prices	Target of Guide Price	Threshold Price	Sluicagate Price	Intervention Price	Basic Price	Reference Price	Variable Levies	Customs Duties
Beef & Veal	1.11.64	1.4.68	0	0					0	0
Pig Meat	1.8.62	1.7.67		0	0	0	0		0	
Poultry	1.8.62	1.7.67		0	0				0	
Eggs	1.8.62	1.7.67		0	0				0	
Milk	1.11.64	1.4.68	0		0				0	0
Butter	1.11.64	1.4.68		0		0			0	
Cheese	1.11.64	1.4.68		0		0			0	
Duram wheat	1.8.62	1.7.67	0	0		0			0	
Soft Wheat	1.8.62	1.7.67	0	0		0			0	
Barley	1.8.62	1.7.67	0	0		0			0	
Maize	1.8.62	1.7.67	0	0		0			0	
Rice	1.9.64	1.9.67	0	0		0			0	
Other Cereals	1.8.62	1.7.67	0	0		0			0	
Fruits & Veg.	1.8.62	1.1.67				0	0	0		0

^a Sources: (12,102).

		United Kingdom					
Export Subsidies	Other Measures	Deficiency Payments	Variable Levels	Customs Duties	Quotas	"Monopoly" Trading	Other Measures
0	sanitary & veterinary regulations	0		0			sanitary & veterinary regulations
0		0		0	0		compensation for feed cost increases
0				0			san. & vet. regulation
	quality stds.	0		0	0	0	comp. for feed cost increase
0		0				0	
0	consumer subsidies				0		some consumer subsidies
0	consumer subsidies			0			some consumer subsidies
	Deficiency paym.						
0	Subsidies for denaturing	0	0				
0	bread grains	0	0	0			
0			0				
0							
0		0		0			
0	quality stds.			0	0		

The calculation of the "variable levies" to be applied on imports from extra EEC countries involves three steps: (1) a target or indicative price is determined and is a theoretical price towards which the market price should tend: (2) a threshold price is fixed at which imports from nonmember countries can enter the EEC and which is lower than the target price by the transportation costs from the port of entry; and (3) the import levy is computed on a daily basis as the difference between the threshold price for a commodity and the world price.

Along with the variable levies, intervention prices are employed to ensure that a satisfactory level of prices is achieved in the EEC. The intervention price is somewhat between 90-95% of the target price and constitutes a guaranteed price at which government agencies will undertake support buying if the market price shows a tendency to fall below the intervention price. In conclusion then, the CAP keeps market prices within two limits; the upper limit is the threshold price and the lower limit is the intervention price. If excess demand or rising costs in the market for an agricultural commodity tend to raise the market price above the threshold price, then imports from extra-EEC sources enter the community to fill the gap in demand. If an excess supply causes the market price to fall below the intervention price, the EEC Commission will have to enter the market and support the price. The target-levy-intervention system is not the only set of instruments used in the EEC to support prices and to protect the agricultural sector from outside competition. Other important instruments used are:

- a) The levy-sluicgate system involves an import levy and export

subsidies but there is no provision for guaranteed producer prices and market intervention.

b) Basic prices are exactly like target prices but are not used to calculate variable levies but rather a guaranteed minimum wholesale price.

c) Norm prices are also similar to target prices except that deficiency payments (rather than applying levies) are paid to domestic producers to bring their price received up to the norm price.

The operation of the common agricultural policy has been occasionally disrupted by exchange rate devaluations and revaluations of currencies of EEC member countries. The effect of exchange rate variations on the smooth operation of the CAP has been recently analyzed from a theoretical viewpoint by Hallett (32), Josling (39) and Vittas (99).

Since the CAP sets common farm support prices for agricultural products in terms of units of account (equivalent to the U.S. dollar) and then converted into each country's currency, a change in the exchange rate of any member country results in an immediate increase or decrease in that country's support prices in terms of the national currency. The main short-run effects of these exchange rate variations will be income transfers from consumers to agricultural producers in time of devaluation and from producers to consumers in time of a currency revaluation. To avoid such transfers and therefore a major disruption of the common agricultural market it is necessary to adopt emergency compensatory measures.

Three recent cases provide us with evidence of the kind of problems created for the CAP by changes in exchange rates. These cases are the

devaluation of the French franc in August of 1969, the upward revaluation of the German mark in October, 1969, and, more recently, the floating of the mark in May of 1971. As an illustrative example we shall use the German mark that was officially revalued in 1969 by 9.3 percent, which would have meant, at the absence of any emergency intervention, an immediate drop in German support prices by 8.5 percent (in terms of marks). For German importers of agricultural products, imports from intra-EEC sources would have become cheaper, but since the German intervention prices would have been lowered, intra-community trade would have probably remained unaffected by the revaluation. To compensate German farmers for their income loss resulting from these price reductions, the EEC Council authorized a set of transitional measures including the adoption of support prices in Germany, frozen at the pre-revaluation level in terms of marks, and compensatory import taxes and export subsidies for most agricultural products covered by the CAP. These temporary measures were discontinued on January 1, 1970.

How devaluation or revaluation affects future agricultural production and trade would depend on the method and duration of the compensatory measures adopted. In the short run, though, it would appear that exchange rate flexibility is incompatible with the preservation of the common market in agricultural products. This incompatibility refers primarily to the goal, implicit in the arrangements of the CAP, of equity for all farmers of the community rather than the establishment of uniform prices maintained by variable levies. However, should the attempt to establish a monetary union within the Community, where fixed exchange

rates would prevail among the currencies of weaker countries, prove successful then the operation of the CAP would no longer be disrupted by monetary pressures.

D. Changes in the EEC Degree of Agricultural Protection

About 42 percent of EEC imports of temperate zone products were protected in 1969 by the "variable levy" system. Unlike a fixed tariff which maintains a constant margin of protection over time, the variable levy system of protection changes as a function of the difference between the domestic support prices and world prices. The system works in a way that demand for agricultural commodities in a member country will be met first by domestic production, secondly by imports from other member countries and finally by extra-EEC imports. The variable levy system can be viewed either as a domestic price support scheme or as an impediment to trade. If agricultural protection in the EEC took the form of constant ad valorem tariffs it would be fairly straightforward to measure. In fact, the European Community's variable import levies, which have a comparable effect to variable quotas, belong to the category of nontariff barriers and thus less amenable to measurement. A nontariff barrier, in the broadest sense, is any measure (usually a governmental intervention) other than a tariff, that significantly distorts international trade. The protective effect of the variable levy system depends not only on the amount of the levy itself but also on the atmosphere of uncertainty it creates among foreign sellers because of the complexity of its operation and its day-to-day fluctuations.

Several attempts to measure the degree of protection inherent in the variable levy have been made in the literature. A summary of these findings is presented along with some estimates of our own in Table 11.2. The level of nominal protection of the variable levy system can be expressed either in terms of an "ad valorem tariff equivalent" (also called an "implicit tariff") or in terms of an "implicit price ratio" that consists of the ratio between the prices domestic producers actually receive and those which they would receive if competing foreign products were imported freely into the EEC (8, p. 3).

With reference to commodity i we define the ad valorem tariff equivalent (TE_i) for the variable levy as

$$TE_i = \frac{P_i^d - P_i^w}{P_i^w} \quad (1)$$

where P_i^d represents the price received by domestic producers (e.g. threshold prices) and P_i^w the c.i.f. world import price of competitive foreign substitutes for the product i . Consequently, the implicit price ratio (IPR_i) is defined in Equation (2) as

$$IPR_i = \frac{P_i^d}{P_i^w} = 1 + TE_i \quad (2)$$

We will utilize the implicit price ratio as an explanatory variable for the EEC import demand of temperate zone products in a following chapter of this study. Here, Table 11.2 provides a comparison of the ad valorem tariff equivalent for the EEC's variable levies. The first column gives

Table 11.2. Comparison between pre-CAP and post-CAP levels of import tariffs in the EEC
(ad valorem equivalents of variable levies and other import restrictions) (percent)^a

Commodities	Pre-CAP Common External Tariff 1960-61 (1)	Post-CAP Ad Valorem Equivalent of the Common External Tariff					
		1963	1965	1967-68(2)	1968(3)	1968-69	1969-70(4)
<u>Live Animals and Animal Products</u>							
1. Live animals	13.6	19.8	41.1	---	48.5	77.9	---
2. Meat, edible meat offals	19.0	--	34.5	---	52.1	47.8	---
3. Beef and veal	19.9	--	--	70.0	---	75.2	---
4. Pork	19.9	--	--	39.0	---	47.1	---
5. Ham	19.9	--	--	63.0	---	---	---
6. Poultry	18.0	--	--	47.0	---	31.5	---
<u>Dairy Products</u>							
1. Dairy products & eggs	18.8	--	--	---	137.3	---	---
2. Milk and cream	16.0	--	51.6	350.0	---	73.3	---
3. Butter	24.0	--	140.0	538.0	350.0	214.5-297.0	---
4. Eggs	12.4	--	33.7	53.0	---	32.3	---
5. Cheese	23.0	--	106.7	---	---	175.4	---

^aSources of the above data have been: for (1) the C.E.D. study (16), for (2) the study by Berntson *et al.* (9), for (3) the estimates by Malmgren and Schlechty (56) and for (4) the study by Rojko *et al.* (79). The remaining columns are the author's estimates.

Table 11.2. (Continued)

Commodities	Pre-CAP Common External Tariff 1960-61 (1)	Post-CAP Ad Valorem Equivalent of the Common External Tariff					
		1963	1965	1967-68(2)	1968(3)	1968-69	1969-70(4)
<u>Cereals and Preparations</u>							
1. All cereals	12.9	55.1	73.1	---	72.4	87.1	---
2. Wheat	20.0	54.4	110.0	91.0	---	110.0	83.0-89.0
3. Barley	12.8	117.1	91.5	62.0	---	97.8-126.8	102.0
4. Maize	8.6	63.8	63.3	65.0	---	100.0-106.7	57.0
5. Grain sorghum	8.0	--	--	61.0	---	---	65.0
6. Rice	14.8	--	--	36.0	---	27.8	65.0
7. Other cereals & prep.	22.2	82.6	102.2	---	---	73.9	---
8. Fodder	15.0-21.0	92.0	60.7	---	---	68.6	---

the Common External Tariff prevailing in the EEC before the implementation of the CAP. If one compares this column with the ad valorem equivalents presented in the remaining columns there would appear that there has been a substantial increase in protection in the post-CAP period. The more heavily protected commodities seem to be dairy products, with the exception of eggs, and cereals like wheat, barley and maize. For example, butter reached a level of protection of 538 percent in 1967-68 and milk and cream a level of 350 percent. These estimates have to be regarded as very tentative. There are several problems associated with these figures that make any definite conclusion very difficult. One of the practical difficulties involves the choice of threshold prices as a measure of the prices actually received by EEC farmers which could be about 5 to 10 percent higher (46, p. 39). Furthermore, the c.i.f. import price is only a rough approximation of the world price for a commodity because one has to assume that the development of the CAP has not affected world prices for temperate zone goods and also because there is not a world free market for many agricultural commodities. Finally, the Common External Tariff in the 1960-61 period is not an accurate measure of the pre-CAP level of protection because of the complexity of the price support schemes and the diversity of the trade protection instruments used by the six EEC countries before the implementation of the CAP.

More recently, in 1971, the Directorate-General for Agriculture of the European Economic Community published a study comparing the levels of agricultural protection in the United States and the Community which suggests that the incidence of agricultural support in the two is about

the same (22). The method used consisted of estimating the decline in farm income that would take place following the removal of all agricultural support measures during 1967 and the conclusion was that producers' incomes would be reduced by 50.4 percent in the EEC and 44.3 percent in the United States. Use of a dynamic econometric model was made for the effect of support withdrawal for American Agriculture, while for the EEC no econometric model was utilized. For individual commodity groups the percentage change in farm income due to the elimination of support was in 1967 as follows:

	<u>United States</u>	<u>EEC</u>
Wheat	-56.5	-47.2
Rice	-17.8	-17.3
Feed grains	-50.0	-38.1
Beef and veal	-18.0	-38.7
Pigmeat ⁵		-23.2
Milk and milk products	-21.1	-64.6
Eggs and poultry-meat	(not protected)	-15.2

The EEC study estimates that the removal of all support to crop production would reduce farm output by 27.8 percent in the United States and by 19.0 percent in the EEC, while in the case of livestock products farm output would be reduced by 35 percent in the United States and by 73 percent in the EEC. A word of caution has to be said in interpreting the

⁵The effect of support withdrawal was estimated for the United States for beef and veal and pigmeat together.

findings of this study, primarily because of the fundamentally different methodologies used to calculate the incidence of support in the EEC and the United States. The question of evaluating the degree of protection associated with the CAP has not yet been fully answered and only further research could settle this matter.

E. Some Implications of the CAP

We can now attempt to summarize the more significant implications of the implementation of the Common Agricultural Policy of the EEC. As we pointed out previously, the price system established by the CAP has been characterized by agricultural prices set above the world market price and in most cases above the pre-CAP level in the major producer countries of the Community. Furthermore, the EEC Council has frequently set prices above the level recommended by the Commission, because as Warley (101, p. 20) observes:

"... the highest common factor of agreement has frequently been reached only by making the policy more protectionist."

Since the adoption of the CAP by the six, extreme difficulties have been experienced between the member countries in reaching agreement on both the level of support prices and expenditures, because of the wide differences in policy and self-interest in each of the member States. As a result, the EEC member countries would be reluctant to engage in a substantial revision of the CAP arrangements that have been agreed on in the past with great difficulty and elaborate compromises.

As we saw in Section C, changes in exchange rates have threatened to disrupt the operation of the CAP and has altered the balance of advantage

between farmers of different member States. It is believed that the establishment of a monetary union will eliminate this source of difficulty in the Community.

In addition to resulting in higher prices for farm products the adoption of the CAP has stimulated domestic production. As a result the overall degree of self-sufficiency has increased for most agricultural commodities and growing surpluses have accumulated for grains, dairy products and sugar. This has considerably increased the cost of financing export restitutions and market intervention in the Common Market. It would appear that current spending to support markets and prices is not only excessive but it does not seem to have contributed significantly to the solution of the major problems of agriculture in the EEC.

The consumers in the EEC have incurred the costs of the CAP arrangements by paying high prices for agricultural products and by contributing with their taxes to the financing of the CAP. Finally, the Common Market's agricultural policy has influenced world trade of temperate zone goods. The increase in agricultural self-sufficiency, the rise in the degree of import protection and the abolition of all trade restrictions among the member States has reduced net import requirements from nonmembers, while the growing surpluses of several commodities and the policy of export restitutions has stimulated agricultural exports.

F. Agricultural and Trade Policies in the European Free Trade Association

The constitutional document which sets the objectives and defines the rights and obligations of the Member States of the European Free Trade Area (EFTA) is the Stockholm Convention. It was signed in January, 1960, and came into effect in May of the same year. Seven countries signed the Convention: the United Kingdom, Denmark, Austria, Norway, Sweden, Portugal and Switzerland. In March, 1961, Finland signed an association agreement with EFTA. The European Free Trade Association took the form of a Free Trade Area for industrial goods, where tariffs (and quantitative restrictions) between the participating countries are abolished but they still maintain the individual tariffs vis-à-vis the rest of the world. Tariff reductions on most industrial commodities began in July, 1960, for the seven full members; these tariffs were eliminated on December 31, 1966. Finland's tariffs and quantitative import restrictions on industrial products imported from EFTA Member States were reduced in stages beginning in July, 1961, and were abolished by January 1, 1968.

The authors of the Convention were essentially pragmatic in their approach and did not try to legislate in detail and in advance for every contingency that might arise. Instead, they established a framework within which the necessary minimum of detailed rules could be set out; for the rest they contented themselves with the statement of certain guiding principles and the indication of procedures by which those principles could be applied in actual situations. The scope of the Convention is limited to the measures necessary for the establishment

between the seven countries of a free trade area of the kind defined in Article XXIV of the GATT as "a group of two or more Customs territories in which the duties and other restrictive regulations of commerce are eliminated on substantially all the trade between the constituent territories in products originating in such territories." The cooperation provided for by the Convention is, in fact, essentially of a commercial nature, with few direct and immediate obligations bearing on the economic and social policies of the Member States. However, should the need for closer economic cooperation arise with the completion of the Free Trade Area, nothing in the Convention prevents the Member States from taking the steps necessary to this end.

The principal objectives of EFTA are: a) to promote sustained economic activity, full employment, increased productivity and optimum use of resources, financial stability and continuous improvement of living standards; b) to ensure that trade between the Member States takes place under conditions of fair competition on terms as nearly equal as possible; c) to avoid significant disparities between Member States in the conditions of supply of raw materials produced within EFTA; and d) to contribute to the expansion and harmonious development of world trade and to the progressive removal of barriers to it.

The European Free Trade Area arrangements have been basically limited to industrial commodities, while trade in agricultural and fish products has been governed by special provisions. Differing farm support policies pursued by individual member countries ruled out the possibility of establishing an agricultural free trade area. Furthermore, the pattern

of agricultural production and trade in EFTA countries is more diverse than that of the EEC, while the sources of supply and export markets of the EFTA members lie outside the EFTA area. Since the preconditions for establishing a unified market for agricultural commodities did not exist, only bilateral agreements among the member states have characterized the agricultural and fisheries sectors of EFTA.

The objectives of EFTA cooperation with respect to the agricultural sector are contained in Article 22 of the Convention:

"...the objectives of the Association shall be to facilitate an expansion of trade which will provide reasonable reciprocity to Member States whose economies depend to a great extent on exports of agricultural goods. This objective is to be pursued in the light of the fact that the various EFTA countries are pursuing policies designed to promote increased productivity and the rational and economic development of production, to provide a reasonable degree of market stability and adequate supplies to consumers at reasonable prices, and finally to ensure an adequate standard of living to persons engaged in agriculture. In pursuing these policies, Member States should have due regard to the interests of other Member States in the export of agricultural goods and should take into consideration traditional channels of trade.

"Bilateral Agreements concluded among the Members prior to the signature of the Convention or at any subsequent date, including modifications to agreements already made, are to remain in force as long as the Convention itself."

In the ultimate analysis this agreement of the EFTA countries serves the promotion of their mutual trade in agricultural goods while maintaining full authority over their agricultural policies. It was thus agreed that agriculture should be dealt with in the body of the Convention, but governed by special provisions and that, although not excluding multilateral arrangements, the elimination of barriers to trade should be agreed bilaterally and formalized in special arrangements.

At present, there are ten main bilateral agreements in force in Member States. The contents of the agreements vary according to the specific circumstances relevant to each of them, but most of the agreements nonetheless have several common features.

All agreements have general provisions containing, *inter alia*, statements by which the nonagricultural countries, as partners to the agreement, undertake to give the best possible opportunities to imports from agricultural exporting EFTA countries. A clause regarding the treatment of dumped and subsidized agricultural exports from third countries which cause damage to an EFTA country is also to be found in a number of agreements. Most agreements contain provisions on tariff elimination for specified products. These agreements apply in most cases only to one of the parties to the agreement, but in some cases both parties agree to the elimination of their tariffs on certain products. Three methods for eliminating tariffs are applied: total one-step abolition or suspension to a zero level; abolition according to a special time table; or reduction according to the time table for tariff reduction in the industrial field. Several agreements contain provisions on the establishment of new or increased quotas which are in some cases combined with the abolition of Customs duties on the same products. Finally, the agreements generally provide for the establishment of a liaison committee which regularly reviews questions of mutual interest relating to the trade in agricultural products between the countries concerned.

The most important agreement in terms of volume of trade is the Danish-British agreement, under which the United Kingdom has undertaken to

import several products, including bacon and butter, free of duty. Agricultural trade has been influenced through preferences as in the U.K.-Commonwealth Agreement and Portuguese-African ties. The agreements between Denmark and Sweden, and Denmark and Switzerland also contain concessions which assist Danish agricultural exports to these markets. The agreements with Portugal are particularly important for the promotion of wine exports from Portugal to other EFTA countries. It is worthwhile to notice that EFTA's imports of agricultural products are of particular interest to the United States because the area forms the second largest market.

G. United Kingdom's Agricultural and Trade Policies and a Comparison with the CAP

The United Kingdom's agricultural policy, in the post-war period, has been based on the Agriculture Acts of 1947 and 1957. The main goal, as indicated in the 1947 Act is "to secure a stable and efficient agricultural industry capable of producing such part of the nation's food and other agricultural produce as in the national interest it is desirable to produce in the United Kingdom, and of producing it at minimum prices consistent with proper remuneration and living conditions for farmers and workers in agriculture and an adequate return on capital invested in industry." Furthermore it has been desirable for agricultural production to become more efficient in order to achieve a steady improvement in the competitive position of the industry.

The Agriculture Acts provide for the support of domestic production by guaranteeing minimum prices (through deficiency payments) each year.

at the Annual Review. The system of deficiency payments operates as follows. The Government guarantees a certain price to farmers, lets them sell the commodity in the free market and then makes a direct payment to them consisting of the difference between the guaranteed price and the market price. This system of farm support is of great advantage to consumers and to countries that have a low degree of self-sufficiency even though the annual cost of this system may be highly unpredictable. Rye, oats, beef and veal, and mutton and lamb are the only products to enjoy an unlimited guarantee, since there are many commodities for which only a given quantity or the quantity grown on a limited acreage receive the guaranteed price. In addition to the deficiency payments, the government subsidizes the price of fertilizer and lime and the farmers receive grants that serve for improving their production facilities.⁶

The United Kingdom is a very large importer of agricultural products while its farm exports are marginal in terms of both volume and value. With the exception of horticultural products, there are normally no restrictions on imports of farm products into Britain. Furthermore, Commonwealth countries and Ireland are exempted from duties or have preferences with respect to the duties.

An attempt will now be made to compare the welfare implications of the major policy instruments of price support for agricultural commodities in the Common Market and the United Kingdom. Among the instruments which make up the CAP to be considered are the variable import levies (the

⁶ A summary of the United Kingdom's agricultural support measures are presented in Table 11.1.

difference between the threshold price and the world price for the commodity in question) which apply to various temperate zone products. The variable levy system will be next compared with Britain's deficiency payments policy which consists of the guarantee of a certain price to farmers for a commodity and then the domestic producer receives a payment (deficiency payment) to compensate for the difference between the world price and the guaranteed price.

As we saw previously, the CAP consists of a variety of regulations that differ from commodity to commodity, but there are some common features that amount to an equalization of the effects of state intervention in the agricultural sector, by ensuring free access by all domestic producers to all markets within the EEC, by establishing free factor movements within it, by operating a common system of protection against third countries and a common price and income policy for all member States. This common price and income policy for agriculture basically involves the establishment of a "variable levy" system of protection. The prices of agricultural products in the Common Market are fixed within certain ranges and maintained by support buying and import controls. The basic instrument, with respect to the policy of markets, of the CAP is a community-wide price for selected commodities that is realized by a combination of variable levies and domestic support buying. The relevant producer price in this case is the established threshold price which is a type of minimum import price.

Market prices in the EEC are maintained within two limits; the upper limit is the "threshold price" and the lower limit is the "intervention

price.¹¹ If excess demand or rising costs in the market for an agricultural commodity raise the market price above the threshold price, then imports from nonmember sources enter the Community to fill the gap in demand. If an excess supply causes the market price to fall below the intervention price, the EEC Commission will have to enter the market and support the price by buying the excess supply.

We now turn to an analysis of the differential welfare implications of the Variable Levy and the Deficiency Payment programs within the framework of a static Marshallian partial equilibrium approach.⁷ Assuming that agriculture produces a single homogeneous product, we can represent the returns from the Variable Levy System by means of a diagram such as Figure 1 where the domestic support price P_2 is set above the world price P_1 and achieved by the imposition of an import levy of $(P_2 - P_1)$ per unit of product.⁸ D and S are the domestic demand and supply of the product, respectively. If there were no price support program, the domestic market price would equal the world import price P_1 . Domestic production would be at the level q_1 , and domestic consumption would be at the level q_4 with the difference $(q_4 - q_1)$ being equal to the amount imported.

⁷The diagrams utilized are adopted from Dean and Collins (17) and Josling (38). The usual restrictive assumptions of Marshallian welfare analysis are used which lead to the definition of social cost as a loss in consumer and producer surplus. The area under the demand curve is assumed to represent a measure of total utility for a commodity and the supply curve is assumed to measure the opportunity cost of the resources used to produce that commodity.

⁸Because the analysis in Figure 1 is static, it does not matter whether the levy is a variable, fixed or ad valorem.

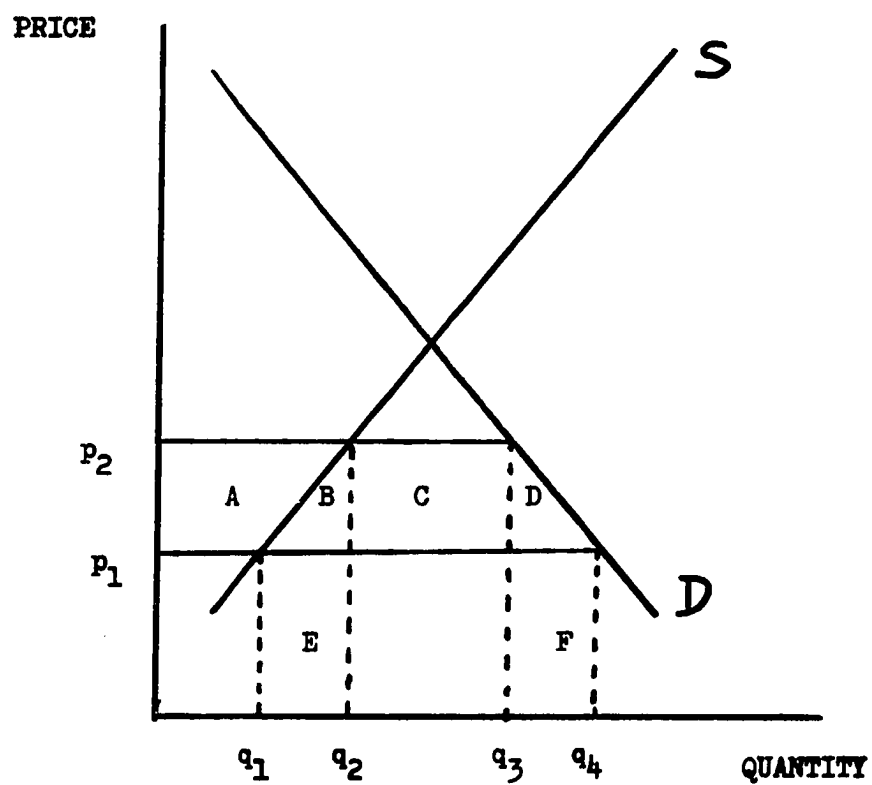


Figure 1. Market for a good subject to a Variable Levy System

The imposition of the variable levy scheme supports a price P_2 , higher than the market or free trade price.⁹ Producer surplus increases by A, while domestic production increases from q_1 to q_2 and consumption declines from q_4 to q_3 requiring now a smaller amount of imports: $(q_3 - q_2)$. The levy revenues collected amount to C, while there is saving of foreign exchange by the amount E+F. More analytically, consumer's expenditures will be less by the area F but greater by $A + B + C$, while B represents the additional resource cost due to the encouragement into the industry of extraproductive resources worth $B + E$. C represents a transfer from consumers to the government (taxpayers) and area A a transfer from consumers to producers. The triangle D is the net loss in consumer well-being, assuming that the foreign exchange savings F are spent on other commodities. In case the commodity is used as an intermediate good, then the place of consumers in our analysis is taken by the intermediate producers and probably, in the final analysis, by the consumers themselves.

Figure 2 is similar to Figure 1 and depicts the domestic market for a good whose price is supported by a deficiency payment program. Assuming again that P_1 represents the world market price, the government guarantees to the producer the price P_3 by the payment of a deficiency payment per unit of product of $(P_3 - P_1)$ at a budget cost of $A + B$. Domestic output increases from q_1 to q_2 while consumption remains the same at the level q_4 with the difference $(q_4 - q_2)$ being the level of imports. Savings in

⁹ In our example we assume that the world price remains unaffected by the reduction of imports.

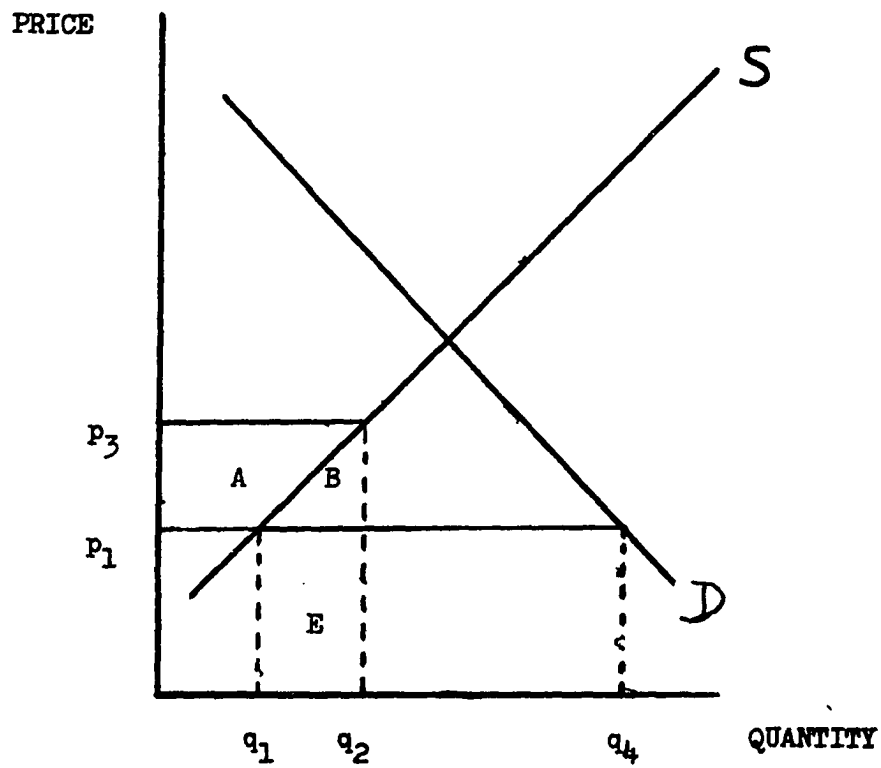


Figure 2. Market for a good subject to a Deficiency Payment System

foreign exchange is depicted by the area E, while B represents the additional resource cost from extraproductive resources induced into the industry by the policy and area A represents the increase in producers' surplus.

In comparing the two farm support programs, it appears that imports would be lower in the variable levy system by the amount $(q_4 - q_3)$ implying a greater foreign exchange saving represented by area F in Figure 1. Even though the increase in producers' surplus and the extra cost of resources needed for the expansion of domestic production are the same in both programs, the variable levy system imposes a loss to consumers' surplus by D. Finally, while there is a net increase in levy revenues by C in the variable levy scheme, the deficiency payment scheme implies an increase of government budget cost by the amount of the area A + B. So, if the adoption of a variable levy scheme has an effect to improve the farmers' well-being and reduce the consumers' welfare, the deficiency payment program would make farmers better off and consumers no worse off as compared with the free world trade ideal. The effect of the variable levy system on world trade is more restrictive than the deficiency payment scheme.¹⁰

¹⁰ A more detailed comparison between the deficiency payments and variable levy schemes can be found in Josling (38,40) and Marsh and Ritson (59).

H. Agricultural Policies in Denmark, Norway, and Ireland

Denmark is an important net exporter of agricultural products (mainly pork, dairy and poultry products) and in the past it has been an exponent of liberal trade policies, but in the early 1960's various support measures for farmers were adopted.

Danish agricultural policy is designed to exploit the production capacity of the agricultural industry to the fullest possible extent. The Agricultural Marketing Act of 1962 provided that prices paid to farmers for pork, beef, veal, poultry meat and eggs be maintained at an established level (based on 1961-62 income) with adjustments for any increase in production costs. It is worthwhile here to mention that over 60% of Danish agricultural production is exported and internal prices have reflected export market conditions. In 1966 the guaranteed price system was abolished and replaced by a set of variable import levies designed to maintain basic prices. The support system for livestock products differs from that for grain.

Revenue from the grain levies, together with a government subsidy, is credited to the Grain Equalization Fund which then disburses money to grain exporters and to pig and poultry producers as compensation for the higher feed costs. For livestock products marketing agencies discriminate between products for domestic and foreign use and charge a higher price for the farmer, the proceeds being over total production. The Danish form of agricultural support and trade protection is not fundamentally different from the Common Agricultural Policy of the EEC.

In postwar years, Danish farmers strove to increase production and by

now production has reached the point where less than one-third of the output can be consumed domestically while the remaining two-thirds must be exported. In recent years, Danish agriculture has suffered difficulties in finding adequate outlets for its agricultural products in foreign markets and as a result, a growing income disparity between agriculture and the rest of the economy has occurred.¹¹

Norway's agricultural policy has had four major targets:

- (1) To increase production in sectors which are on an import basis, such as grain, fruits and vegetables
- (2) To maintain self-sufficiency in the animal products sector but avoid surpluses
- (3) To maintain population in remote areas
- (4) To equalize farm and nonfarm levels of income.

The developments of recent years indicate some success in achieving the first two objectives. Near self sufficiency has been reached in milk, livestock and egg production. The third target has been more difficult to achieve as population in the remote areas continued to decline. To achieve the fourth goal, farm prices are guaranteed at high levels (feed grains) and subsidies are given to milk producers.

Agricultural imports are restricted by foreign exchange restrictions, state trading in grain and grain products, quantitative restrictions (meat, dairy products, eggs, fruits and vegetables), and high duties. To

¹¹ More information on Danish, Norwegian and Irish agricultural and trade policies is available in Ferris et al. (27).

support the exports of butter and cheese--the main agricultural products produced in surplus--minimum export prices are guaranteed. The most important exports of Norway are fish products, wood, pulp and paper.

In general the agricultural and trade policies of Norway (import controls, State and Producer monopolies and various production grants) are significantly different than the CAP arrangements.

Irish agricultural policy as expressed in the second Program for Economic Expansion, which was adopted in 1964, has four main objectives. These are:

- (1) Increased productivity of grasslands, which comprise about 85 percent of all agricultural land,
- (2) Improved agricultural education, extension and research,
- (3) Improvements in agricultural marketing and export promotion programs, and
- (4) an increase in agricultural income.

Ireland is a net exporter of most livestock products and a net importer for most crops, particularly grains and fruits. The United Kingdom is by far the most important market for Irish exports of farm products.

The Government supports farm incomes through minimum guaranteed prices for a number of agricultural commodities including milk, pork, wheat, feeding barley, bacon and other dairy products. There is no domestic price support programs on poultry, eggs, potatoes and fruits and vegetables but these products benefit from government assistance to improve production techniques and product quality as a part of the overall plan of development in the economy.

Irish agriculture has been protected from foreign competition by a wide range of instruments that include customs duties and import quotas, export and import licensing (wheat and coarse grains), state monopolies (dairy products), sanitary regulations (meat and animal products), and bilateral trade agreements, especially with the United Kingdom and Eastern European countries.

III. CHANGES IN THE REGIONAL DISTRIBUTION AND COMMODITY COMPOSITION OF THE EEC AND EFTA AGRICULTURAL TRADE IN THE FRAMEWORK OF WORLD TRADE: 1953 to 1969

A. Patterns of World Agricultural Trade

In this section we will investigate the position of the EEC and EFTA in the framework of world trade of temperate zone products as well as changes in intra-EEC patterns of trade. For this purpose we have constructed world trade matrices for the years 1953, 1961 and 1969 for each of the thirteen commodity groups considered in this study. The data for the construction of the world trade matrices were taken from the United Nations' available statistics on trade (91-93). Recently in the literature the pattern of world agricultural trade has been analyzed by Fernon (26), Berntson et al. (9), Lougheed (54) and Knox (46).

We will begin our analysis by identifying some trends in the world trade in temperate zone products in the 1953-69 period. The total value of world trade in temperate zone goods has more than doubled from 1953 to 1969 from about 12.3 billion dollars to about 27.5 billion dollars. World trade of these commodities amounted to about 19 billion dollars in 1961, implying a slightly faster growth of trade in the 1961-69 period as compared to the preceding period, but it has not kept pace with the growth of the value of world trade of all commodities combined, which almost tripled over the 1953-1969 period. As it can be seen from Table III.1, which shows the commodity composition of total world trade, temperate zone products have diminished in importance in total world trade from 14.6 percent in 1953 to 11.23 percent in 1969 of total world trade in all

Table III.1. The commodity composition of total world trade in temperate zone products (value in million dollars)^a

Commodities	1953			1961			1969		
	value	% of (14)	% of (16)	value	% of (14)	% of (16)	value	% of (14)	% of (16)
1. Live animals	228	1.85	0.27	737	3.88	0.53	1116	4.06	0.46
2. Meat	1356	11.02	1.61	2045	10.75	1.46	3949	14.35	1.61
3. Dairy products	941	7.65	1.12	1198	6.30	0.85	1699	6.18	0.69
4. Eggs	263	2.14	0.31	321	1.69	0.23	181	0.66	0.07
5. Fish	549	4.46	0.65	1024	5.38	0.73	1717	6.24	0.70
6. Wheat	1506	12.24	1.79	2388	12.56	1.70	2108	7.66	0.86
7. Rice	574	4.66	0.68	320	1.68	0.23	439	1.60	0.18
8. Barley, maize	855	6.95	1.01	1149	6.04	0.82	1684	6.12	0.69
9. Other cereals, prep.	715	5.81	0.85	904	4.75	0.64	960	3.49	0.39
10. Fruits, vegetables	1992	16.19	2.36	3403	17.90	2.43	5223	18.99	2.13
11. Feed-stuffs	468	3.80	0.56	760	4.00	0.54	1615	5.87	0.66
12. Hides, skins, furs	637	5.18	0.76	958	5.04	0.68	1277	4.64	0.52
13. Wood, cork, pulp	2222	18.06	2.64	3809	20.03	2.72	5543	20.15	2.26
14. Total temperate zone goods	12305	100.00	14.60	19016	100.00	13.56	27511	100.00	11.23
15. All other goods	71995	--	85.40	121184	--	86.44	217559	--	88.77
16. Total World Imports	84300	--	100.00	140200	--	100.00	245070	--	100.00

^a Source: Derived from world trade matrices constructed from (91-93).

commodities.¹ This structural transformation is consistent with the general long-run trend of world trade in agricultural products that has represented a declining proportion of total world trade in all commodities (81,85,105). It is commonly held that this relationship between agricultural and nonagricultural trade is associated with a slowly growing demand for agricultural products in the major industrial nations due to a relatively low income elasticities.² This factor becomes even more forceful if one observes that trade in temperate zone products takes place primarily between developed countries since, in the 1953-69 period, more than 80 percent of world exports were destined to developed countries. Furthermore, the share of imports of less developed countries in world trade has declined from 19.3 percent in 1953 to 17.4 percent by 1969, while from the export side about 75 percent of world imports originated from developed economies with a steady decline of the percentage of world imports that originated from less developed economies. It would appear, therefore, that trade in temperate zone products was primarily among the more developed countries themselves with a slight increase in the degree

¹ It is important to notice that these increases in trade refer to the value of total trade and any price increase that might have taken place over this period would imply a slower increase in the volume of total trade. The majority of trade data presented in this chapter will be given in value terms, unless specified otherwise.

² Some additional factors that appear to provide an explanation of the decline of structural importance of temperate zone products in the world market are the tendency toward self sufficiency in many agricultural commodities in several developed countries along with great improvements in farm technology that lead to a rapid growth of domestic agricultural output. Some evidence on these factors can be found in Reference (62).

of concentration over time.

Table III.2, III.3, and III.4 provide a summary of the network of world trade in temperate zone goods in 1953, 1961 and 1969, respectively. In addition to the increasing concentration of trade among developed countries we can observe from Table 4 that the most important traders of temperate zone products have been the EEC, EFTA and the U.S. with a combined share of 77 percent in total world exports and 53 percent of total world imports in 1969. The share of these countries has been 72 percent and 41 percent, respectively, in 1953 thus marking an increase over the period under consideration. The U.S. has seen its share increase in importance in both world imports and exports while Canada, though maintaining its share as a world importer, has seen its importance as a world exporter decline. As exporters of temperate zone goods the countries of Eastern Europe and the People's Republic of China have increased their share in total world imports while all less developed countries have seen their share decline, with the only exception of the exports of the less developed countries associated to the ECC, which increased their world share, especially in the period from 1961 to 1969. Another trend worth listing is the steady decline over this period of Australia, New Zealand and South Africa as exporters of temperate zone products from 10.13 percent of world trade in 1953 to 6.77 percent in 1969.

Several structural changes have taken place over our sample period in the commodity composition of world trade in temperate zone products. From Table III.1 we can observe that in 1969, meat, fruits and vegetables,

Table 111.2. The network of world trade in temperate zone products, 1953 (as a percent of total world trade)^a

EXPORTS FROM:	IMPORTS TO:					TOT EEC	GRT	U.K.	Other EFTA	Total EFTA
	BL	N	G	F	I					
	1	2	3	4	5	6	7	8	9	10
1. Belg.-Lux.		.14	.14	.09		.39		.14	.06	.20
2. Netherlands	.75		1.16	.22	.20	2.32		.86	.22	1.08
3. Germany	.05	.06		.05	.08	.25		.08	.19	.28
4. France	.12	.06	.30		.07	.54		.35	.15	.49
5. Italy	.08	.06	.76	.13		1.02		.44	.41	.85
6. TOTAL EEC	1.00	.32	2.36	.49	.37	4.53	.08	1.86	1.03	2.90
7. Greece, Turkey		.05	.37		.27	.72	.05	.17	.13	.30
8. United Kingdom			.08			.19			.14	.14
9. Other EFTA	.37	.65	1.82	1.12	1.10	5.06	.17	4.95	.88	5.83
10. Total EFTA	.40	.68	1.90	1.13	1.14	5.24	.18	4.95	1.02	5.97
11. United States	.42	.61	.99	.22	.42	2.72	.16	1.10	.94	2.85
12. Australia, New Zealand, South Africa	.07	.10	.18	.83	.16	1.34		6.41	.14	6.55
13. Canada	.30	.40	.73	.08	.19	1.69		3.71	.15	3.86
14. Japan						.05				
15. Other W. Europe	.17	.22	.64	.52	.10	1.66	.07	2.62	.41	3.03
16. E. Europe & China	.17	.29	.47	.14	.32	1.39	.12	1.48	.40	1.88
17. Assoc. LDC			.14	.70		.90				.08
18. Latin America	.22	.32	.44	.39	.41	1.82		3.69	.74	4.43
19. Africa			.16		.05	.30		.85	.11	.95
20. Asia, Mid. E.	.11	.14	.28	.14	.21	.88		1.14	.10	1.25
21. Maghreb			.16	1.53		1.77		.11		.12
22. Other World			.07	.12		.22		.27		.30
23. TOTAL WORLD	3.05	3.21	8.91	6.34	3.72	25.22	.75	28.43	5.26	33.69

^aSource: From a world trade matrix constructed from (91). All flows that accounted for less than .05 percent of world trade were excluded.

U.S.	A,N.Z. S.A.	C	J	Other W.E.	E.E. China	Assoc. LDC	L.A.	A.	Asia MD.E.	Other M	Tot. World	Tot. World
11	12	13	14	15	16	17	18	19	20	21	22	23
												.72
.32				.06	.24	.06	.28		.44	.07	.15	5.13
.13												.77
.10						.25			.23	.42	.17	2.32
.23					.11				.14		.09	2.70
.82	.06	.07		.13	.40	.37	.37	.06	.85	.52	.44	11.63
				.17	.18				.18			1.67
.05	.05	.06		.09				.06	.16			.90
.89	.09		.10	.20	.43	.05	.48	.12	.21		.21	13.90
.94	.14	.09	.11	.29	.46	.05	.51	.18	.37	.05	.21	14.80
	.21	1.64	1.43	.20	.58		2.91	.12	2.53		.07	14.63
.43		.08		.11					.36		1.21	10.13
6.93	.14		.70	.13	.08		.81	.05	.93		.25	15.59
.36											.46	.96
.41				.11	.34		.05		.08			5.81
.20									.20			3.83
												1.00
1.92		.25										8.52
.11												1.39
1.06		.05							1.86			5.18
			2.14									1.94
									.19			2.94
13.29	.58	2.26	4.47	1.24	2.04	.45	4.69	.43	7.59	.59	2.70	100.00

Table III.3. The network of world trade in temperate zone products, 1961 (as a percent of total world trade)^a

EXPORTS FROM:	IMPORTS INTO:					TOT. EEC	GR,T	U.K.	OTHER EFTA	TOTAL EFTA
	BL	N	G	F	I					
	1	2	3	4	5	6	7	8	9	10
1. Belg.-Lux.		.20	.29	.14		.67		.10		.14
2. Netherlands	.41		1.86	.33	.23	2.84		.83	.20	1.03
3. Germany	.06	.18		.13	.16	.54		.08	.32	.40
4. France	.23	.16	1.04		.47	1.89		.39	.32	.72
5. Italy		.05	1.19	.22		1.48		.40	.59	.99
6. TOTAL EEC	.73	.60	4.38	.82	.90	7.37	.07	1.81	1.46	3.27
7. Greece, Turkey			.26		.05	.41		.15	.12	.27
8. U. Kingdom	.05	.08	.12			.33			.06	.06
9. Other EFTA	.20	.44	2.37	.60	1.24	4.85	.11	3.44	1.00	4.44
10. TOTAL EFTA	.25	.52	2.50	.64	1.27	5.18	.12	3.44	1.06	4.50
11. United States	.43	1.00	1.35	.38	.75	3.91	.49	2.64	.77	2.23
12. Australia, New Zealand, S. Africa	.07	.28	.41	.30	.37	1.43		2.79	1.33	4.12
13. Canada	.19	.12	.63	.16	.17	1.27		1.91	.19	2.10
14. Japan			.06			.17		.61		.65
15. Other W. Europe	.22	.35	1.05	.49	.20	2.31		3.09	.70	3.79
16. E. Europe, China	.22	.25	1.10	.53	.85	2.67	.14	1.31	.70	2.01
17. Assoc. LDC		.06	.17	.58	.06	.89		.78	.11	.89
18. Latin Amer.	.24	.45	.95	.19	.61	2.44	.05	.97	.46	1.33
19. Africa	.07	.08	.49	.28	.31	1.23		1.19	.18	1.37
20. Asia, Md. East	.08	.12	.46	.11	.30	1.07		.75	.24	.99
21. Maghreb			.18	1.13		1.39		.07	.02	.09
22. Other World	.06			.06		.13		.08	.10	.18
23. TOT. WORLD	2.65	3.91	13.99	5.44	5.92	31.91	.96	21.64	6.25	27.89

^aSource: From a world trade matrix constructed from (92). All flows that accounted for less than .05 percent of world trade were excluded.

A, N. Z.				OTHER	E. E.	Assoc.			Asia	M Other	TOTAL	
U.S.	S.A.	C	J	W.E.	China	LDC	L.A.	A	Md.E.	World	World	
11	12	13	14	15	16	17	18	19	20	21	22	23
												.91
.20				.05			.19	.13	.36			4.99
.05					.12				.07			1.28
.10				.05	.15	.26		.13	.07	.89		4.33
.19					.14			.06	.11			3.13
.56		.07		.14	.45	.34	.26	.37	.62	.94	.07	14.64
.05					.16				.13			1.09
.07	.05	.06		.29			.05	.10	.19			1.24
.69	.05			.21	.42		.28	.18	.40		.09	11.70
.76	.10	.10		.50	.42		.32	.28	.59		.12	12.94
	.13	1.99	1.43	.65	.53	.06	2.20	.48	3.22	.49	.18	18.16
1.10	.28	.23	.44	.13	.73		.11	.07	.82			9.42
4.66	.11		.68	.07	.98		.44	.09	.31			10.76
.53									.31			1.49
.41				.13	.34		.06		.09			7.21
.22			.22	.11	.15				.47			6.48
												1.08
1.51		.21	.25	.05								6.58
.10								.09				3.09
.60	.08	.06	1.21		.08				.89		.05	5.08
												1.51
.05	.17								.07			.47
10.57	.84	2.78	4.33	1.90	3.88	.45	3.47	1.53	7.41	1.54	.47	100.00

Table III.4. The network of world trade in temperate zone products, 1969
(as a percent of total world trade)^a

IMPORTS INTO:										
	1	2	3	4	5	6	7	8	9	10
EXPORTS FROM:										
1. Belg.-Lux		.52	.59	.67	.12	1.89		.09		.11
2. Netherlands	.58		2.62	.86	.56	4.61	.08	.82	.21	1.03
3. Germany	.18	.39		.36	.74	1.67		.08	.24	.31
4. France	1.02	.76	2.28		1.34	5.39	.05	.46	.37	.83
5. Italy	.12	.11	1.18	.31		1.71		.24	.43	.67
6. TOTAL EEC	1.90	1.78	6.66	2.19	2.75	15.78	.16	1.67	1.28	2.95
7. Greece, Turkey		.05	.36	.05	.11	.59		.13	.12	.25
8. United Kingdom	.90	.08	.08	.12	.05	1.23			.11	.11
9. Other EFTA	.26	.47	1.62	.70	1.39	4.44	.09	3.04	1.46	4.50
10. TOTAL EFTA	1.16	.55	1.70	.82	1.44	5.67	1.00	3.04	1.57	4.67
11. United States	.36	.77	1.19	.75	.85	3.93	.13	.93	.48	1.34
12. Australia, New Zealand, S. Africa	.11	.12	.39	.31	.20	1.13		3.36	.17	3.53
13. Canada	.13	.12	.31	.20	.27	1.03		1.15	.13	1.27
14. Japan			.08		.06	.22		.19		.22
15. Other West Europe	.19	.28	.71	.38	.32	1.88	.06	2.42	.66	3.08
16. E. Europe, China	.20	.31	1.14	.56	1.67	3.88	.17	1.27	.35	
17. Assoc. LDC	.05	.08	.32	.82	.22	1.49			.06	
18. Latin America	.28	.55	1.16	.32	1.22	3.63	.16	.97	.51	
19. Africa			.13	.05	.11	.33		.26	.19	
20. Asia, M. East	.14	.23	.80	.23	.31	1.70		1.01	.27	
21. Maghreb			.13	.34	.06	.58		.09		
22. Other World			.05	.15		.26		.19	.13	
23. TOT. WORLD	3.88	4.94	15.13	7.20	9.62	40.77	1.70	16.68	5.99	22.67

^a Source: From a world trade matrix constructed from (93). All flows that accounted for less than .05 percent of world trade were excluded.

11	12	13	14	15	16	17	18	19	20	21	22	23
											.23	2.45
.29				.09	.08	.06	.06	.11	.32		.18	7.03
.05					.09				.19		.15	2.65
.10			.08	.23	.12	.41			.38	.21	.08	7.88
.11					.20				.14		.08	3.06
.57	.05	.07	.13	.40	.50	.52	.25	.16	1.05	.26	.72	23.07
.06					.31				.07			1.34
.07	.06	.05		.23			.05	.06	.14			1.28
.82	.06	.08	.05	.32	.34		.22	.10	.26		.06	11.41
.90	.12	.13	.09	.55	.36		.27	.16	.40		.09	12.70
	.20	1.10	3.24	.30	.33	.09	1.70	.16	3.50	.19	.30	17.29
1.79		.30										6.77
5.32	.13		.49				.41		.25		.05	9.67
.47												.98
.47												5.32
.28				.10								6.07
.06												1.65
2.83		.25		.18								8.90
.08												.87
.83		.07							.75			3.92
												.72
												.65
14.04	.50	2.82	3.95	1.67	1.52	.66	2.03	.52	6.02	.50	1.17	100.00

wood, cork and pulp amounted for the largest percentages in total value of world trade in temperate zone products with a combined total of about 53 percent. Over time only the share of fish and feedstuffs in world trade of all commodities has increased, from .65 and .56 to .70 and .66, respectively.

If one compares the share of specific products in the total world trade of temperate zone commodities, we can see that live animals, meat, fish, fruits and vegetables, feedstuffs and wood, cork and pulp have seen their share increase from 1953 to 1969. With the exception of wood and forest products, it would appear that this trend is associated with a shift towards high protein foodstuffs in the nutritional mix of high income countries. In contrast, trade in cereals and eggs has decreased in importance from 1953 to 1969 with a more rapid decline in the relative position of wheat and rice and an outright decline in the value of trade in eggs.

We can now summarize the major trends in the world trade of temperate zone products as follows: a) There has been a declining relative importance of temperate zone products in overall world trade. b) There has been an increasing concentration of world trade of temperate zone products among developed economies, especially the EEC, EFTA and the U.S. c) A slight increase has been observed in the share of Eastern Europe, China and associated L.D.C.'s to the EEC as world exporters. d) The largest commodity groups have been; meat, fruits and vegetables and wood, cork and pump, while a shift has been observed towards increased trade in live animals, meat, fish, feed-stuffs, fruits and vegetables and wood, cork and pulp.

B. The Origin and Destination of EEC and EFTA
Trade in Temperate Zone Products

The position of EEC and EFTA in the framework of world trade has changed significantly in the period under consideration. The EEC imported 41 percent of total world exports of temperate zone products in 1969 while EFTA imported 19 percent. As can be seen from Tables III.2, 3, and 4, the share of EEC imports almost doubled over our sample period while the share of EFTA imports in world trade has declined from 34 percent in 1953 to 19 percent in 1969. The world export share of the EEC has doubled for the period 1953-1969 while it has declined slightly for the EFTA group. Total EEC exports and imports increased very rapidly during the 1961-69 period and substantially faster than both total world and EFTA trade.

In Table III.5 we can observe the origin and destination of EEC and EFTA trade in temperate zone products. Total EEC exports have increased from 1431 million dollars in 1953 to 2783 million in 1961 and 6346 million in 1969 implying a slightly higher growth in 1961-69 period as compared with 1953-61. In 1969 more than 66 percent of total EEC exports were destined to the intra-EEC group while intra-EEC trade accounted for about 37 percent of total EEC imports. EEC exports have been increasingly directed towards the intra-EEC group and have nearly doubled in the 1953-69 period. The best extra-EEC customers have been the EFTA countries, Asia and the Middle East that accounted for about 12.6 and 4.6 percent of EEC exports in 1969, respectively. The more salient trends in EEC's exports have been a sharp decline in the shares of U.K., other EFTA countries, U.S., Latin America, Africa and the Maghreb countries. The EEC has been increasingly more successful in exporting temperate zone goods to Turkey,

Table III.5. Destination and Origin of EEC and EFTA trade of temperate zone products, 1953, 1961, 1969 (value in million U.S. dollars)^a

Year			EEC	Assoc. EEC	U.K.	Other EFTA	U.S.	Aust. N. Zealand, S. Af.	Canada
EEC Exports	1953	Value	558	9	229	127	101	2	8
		%	38.98	0.66	16.04	8.89	7.08	.15	.53
	1961	Value	1401	13	343	278	106	4	13
		%	50.33	.45	12.34	9.99	3.82	.14	.46
	1969	Value	4204	43	447	355	158	13	19
		%	66.23	.68	7.04	5.60	2.49	2.0	.30
EEC Imports	1953	Value	558	88	23	622	334	164	208
		%	17.97	2.85	.75	20.04	10.77	5.29	6.71
	1961	Value	1401	77	63	923	743	273	241
		%	23.08	1.27	1.05	15.20	12.25	4.50	3.97
	1969	Value	4204	163	116	1221	1081	311	282
		%	37.48	1.45	1.03	10.88	9.64	2.77	2.51
EFTA Exports	1953	Value	644	22	609	126	116	17	11
		%	35.40	1.19	33.45	6.92	6.34	.95	.61
	1961	Value	984	22	424	202	144	18	18
		%	40.00	.89	17.22	8.23	5.85	0.75	.75
	1969	Value	1337	26	835	450	249	32	36
		%	38.27	.74	23.91	12.89	7.13	.92	1.04
EFTA Imports	1953	Value	357	37	18	717	351	805	475
		%	8.60	.89	.43	17.30	8.46	19.43	11.46
	1961	Value	621	52	11	845	425	783	399
		%	11.72	.97	.22	15.23	8.01	14.77	7.52
	1969	Value	744	69	30	943	369	684	347
		%	14.32	1.32	.57	18.17	7.10	13.18	6.68

^aSource: From world trade matrices constructed from (91-93).

	Japan	Other W. Europe	E. Europe China	Assoc. LDC	Lat. America	Africa	Asia Md. East	Maghreb	Other World	TOTAL WORLD
9	16	49	45	46	8	105	64	54	1431	
.62	1.10	3.45	3.17	3.22	.54	7.31	4.47	3.78	100.00	
7	27	86	65	50	71	118	179	14	2783	
.24	.95	3.08	2.33	1.81	2.53	4.25	6.43	.49	100.00	
36	111	137	144	68	45	290	72	197	6346	
.57	1.75	2.15	2.27	1.08	.72	4.57	1.14	3.11	100.00	
5	204	171	110	225	37	108	218	27	3104	
.17	6.57	5.50	3.56	7.23	1.20	3.49	7.02	.87	100.00	
32	439	507	169	366	234	202	265	25	6068	
.53	7.24	8.36	2.78	6.03	3.86	3.33	4.36	.41	100.00	
60	517	1067	409	999	90	468	160	70	11217	
.54	4.61	9.51	3.65	8.91	.80	4.17	1.43	.63	100.00	
13	36	57	6	63	22	46	6	26	1821	
.73	1.97	3.12	.35	3.48	1.20	2.50	.31	1.45	100.00	
6	95	81	5	61	54	82	8	23	2460	
.25	3.88	3.27	0.20	2.49	2.20	3.39	0.35	0.92	100.00	
24	152	100	7	73	45	111	11	24	3493	
.70	4.35	2.85	.19	2.10	1.27	3.16	.32	.69	100.00	
4	373	231	10	545	117	154	15	37	4145	
.10	8.99	5.57	.24	13.15	2.83	3.70	.36	.90	100.00	
58	706	463	28	382	290	188	17	34	5303	
1.10	13.32	8.73	.53	7.19	5.48	3.55	.31	.65	100.00	
60	733	360	23	247	112	352	33	86	5191	
1.15	14.12	6.94	.44	4.77	2.15	6.77	.64	1.67	100.00	

Greece, Australia, New Zealand, S. Africa, Japan and other Western European countries.

Total EEC imports almost doubled from 3104 million dollars in 1953 to 6068 million in 1961 but increased at a lower rate to 11217 million in 1969. About 37 percent of EEC imports in 1969 originated from within the intra-EEC group with a marked increase of this share from 18 percent in 1953 and 23 percent in 1961. Intra-EEC imports grew faster in the post-EEC period as compared to the pre-EEC period. Besides imports from other EEC member countries, other major sources of imports in 1969 have been the EFTA group (12%), the U.S. (9.6%), Eastern Europe and China (9.5%), and Latin American countries (8.9%). Over the period under consideration only the United Kingdom and Japan have maintained their shares in EEC's imports while gradual declines have taken place in the shares of other EFTA countries, Canada, Australia, N. Zealand, S. Africa and the Maghreb countries. The share of the United States, other Western Europe and Africa did increase in the 1953-61 period but declined in the following period, while the EEC has increasingly imported more from Eastern Europe, China, Latin America, Associated LDC countries, Asia and the Middle East.

The major exporters of temperate zone products in the EEC were France and the Netherlands while the major importers were Germany, Italy and France. In 1969 they imported 4,164, 2,648 and 1,980 million dollars worth of temperate zone products, respectively. Imports of temperate zone products in the EEC have grown less rapidly in the 1961 to 1969 period than the preceding one, while exports have increased more rapidly

In the 1961 to 1969 period. Still, though, the European Community remains a deficit area since its exports have been about half its value of imports with a slight tendency in the later period for narrowing this gap. The only exception are dairy products for which the EEC is a net exporter. Net exports of dairy products were 42 million dollars in 1953 and they have grown to 128 and 263 million dollars in 1961 and 1969, respectively.

Let us now turn to EFTA's trade. Total exports have increased from 1821 million dollars in 1953 to 2460 million in 1961 and to 3493 million in 1969, rising slightly faster in the 1961-69 period as compared to the preceding period. The major customers of EFTA exports were in 1969 the Intra-EFTA group (about 37%), the EEC (38%), the United States (7%), other Western Europe (4%) and Asia and the Middle East (3%). The most important changes in the destination of EFTA exports over the 1953 to 1969 period have been a diversion of trade towards the EFTA group, the U.S. and Japan and a slight decline in the shares of all other country groups.

Total EFTA imports increased from 4145 million dollars in 1953 to 5303 million in 1961 but imports declined to 5191 million by 1969. This later trend is in contrast with the increase of EEC import over the same period. About 25 percent of these imports in 1969 originated from within the European Free Trade Association with no significant change in this share over the period under consideration. Other major sources of imports were the EEC (about 14%), Australia, New Zealand and S. Africa (13%), other Western Europe (14%), the U.S. (7%), Canada (6.7%), Eastern Europe and China (7%) and Asia and Middle East (about 7%). Over the 1953 to 1969 period EFTA countries increased their dependence on imports from the EEC,

other W. Europe, Japan, Asia and the Middle East. Latin America, Africa, Canada and the U.S. have seen their share in EFTA imports decline.

The United Kingdom has been importing almost three times as much as all other EFTA countries, but this relationship was reversed in the case of exports. Both the United Kingdom and EFTA have seen their exports and imports grow less rapidly in the 1961-69 period than the preceding one, and less rapidly as compared with the growth of trade in the EEC. Intra-EEC imports have grown more rapidly than extra-EEC imports, with a marked acceleration of this trend in the 1961-69 period that coincides with the implementation of the CAP. We can consider these figures as a rough first estimate of trade-diversion associated with the establishment of the EEC. It is only a rough measure because it does not take into account the possible dynamic effects of integration. A more detailed examination of the effects of integration on trade flows in the EEC will be attempted in the following section.

The same trend, even though less marked, has been observed with respect to intra- and extra-EFTA trade. The most dramatic change took place in the exports of the United Kingdom. During the first period intra-EFTA exports were declining and substantially lower than extra-EFTA exports. It would appear that during the later period intra-EFTA exports of the United Kingdom have risen almost three-fold and more rapidly than extra-EFTA exports.

In an attempt to provide a tentative estimate of the degree of trade diversion in both the EEC and EFTA country groups we have constructed Table III.6 which provides a picture of intra-EEC and intra-EFTA trade as

Table III.6. Intra-union trade in temperate zone products as a percent of total trade in temperate zone products in the EEC and EFTA, 1953-1969 (in percent)^a

	M _{intra} /M _{tot} ^b					X _{intra} /X _{tot} ^c				
	53	61	69	69 ^d	69 ^e	53	61	69	69 ^d	69 ^e
1. Belg.-Lux.	32.8	27.5	49.0	23.1	212	54.2	73.6	77.1	100.0	77
2. Netherlands	9.9	15.3	36.0	23.6	153	45.2	56.9	65.6	71.6	92
3. Germany	26.5	31.3	44.0	37.0	119	32.5	42.2	63.0	54.8	115
4. France	7.7	15.1	30.4	29.4	104	23.3	43.7	68.4	81.8	84
5. Italy	10.0	15.2	28.6	23.2	123	37.8	47.3	55.9	59.2	94
6. TOTAL EEC	18.0	23.1	37.5	29.7	126	39.0	50.3	66.2	65.1	102
7. United Kingdom	17.4	15.9	10.0	14.5	69	21.1	26.6	96.1	33.5	287
8. Other EFTA	19.4	17.0	21.4	14.8	144	36.4	41.5	38.9	47.2	83
9. TOTAL EFTA	17.7	16.1	13.0	14.7	89	35.4	40.0	44.7	45.3	99

^aSource: Derived from Tables III.2, III.3, III.4.

^bIntra-union imports as a percent of total temperate zone imports.

^cIntra-union exports as a percent of total temperate zone exports.

^dHypothetical 1969 figure under the assumption that trade in the 1961-69 period would have grown at the same rate as in the preceding period.

^eThe actual 1969 figure as a percent of the hypothetical figure.

a percent of total trade over the 1953 to 1969 period.

The formation of a Customs Union³ or a free-trade area is usually expected, by its nature, to cause some diversion of trade flows from the pre-Union pattern of trade. For EFTA the effect on agricultural trade should be expected to be only indirect since no special provisions were made to incorporate the agricultural trade in the free-trade area agreement. With the exception of the United Kingdom, where the deficiency payments system was designed to allow free trade of agricultural products, the other EFTA countries have protected their agriculture from foreign competition with various price support and import protection devices as well as with several bilateral agreements among member states. It comes as no surprise, therefore, that the share of intra-EFTA imports in total imports declined slightly after the formation of the group, primarily because of a sharp decline in the United Kingdom's share. The share of exports to other EFTA countries in total exports increased slightly over time with the share of the United Kingdom's increasing almost three-fold from 1961 to 1969. In general, it would appear that after the formation of EFTA, some diversion occurred in imports of all EFTA members (except the U.K.) and a marked increase in the share of intra-EFTA exports originating from the United Kingdom.

The implementation of the CAP, by eliminating all trade barriers within the community, protecting trade with variable levies and other protective instruments from foreign competition and encouraging exports of

³An examination of the welfare implications of the formation of a Customs Union will be made later in Chapter IV of this study.

temperate zone products with the use of export subsidies or restitutions, should have caused a diversion of trade from extra- to intra-EEC sources of supply. The preliminary results in Table III.6 show a diversion of EEC imports by 1969. Even though the share of intra-EEC imports in total imports for all member countries increased from 23.1 percent in 1961 to 37.5 percent in 1969, this later share was about 26 percent higher than what it would have been if the share in the 1961-69 period would have grown at the same rate as in the preceding period. Trade diversion, measured in this way, seems to have been greater for Belgium, the Netherlands and Italy. From the export side, only Germany's share of exports to other Community countries seems to have been stimulated after the adoption of the CAP.

The above conclusions about the trade diverting effects of the CAP are very tentative and a more analytically satisfactory approach will be followed in Chapter IV where use will be made of estimated import demand functions for the EEC.

C. The Commodity Composition of EEC and EFTA Trade In Temperate Zone Products

Tables III.7 and III.8 present the commodity composition of imports and exports of temperate zone goods in the EEC and EFTA respectively.

Livestock and meat products:

Livestock and meat products have accounted for about 7 percent of total EEC imports and about 13 percent of exports in 1953, but have rapidly increased their share to 19 percent and 22 percent respectively in 1969. In the EFTA group these commodities maintained their share to

Table III.7. The commodity composition of EEC trade in temperate zone products, 1953-1969 (value in million dollars)^a

Commodities	1953		Total Imports 1961		1969	
	value	%	value	%	value	%
1. Live Animals	83.3	2.68	270.2	4.45	707.8	6.31
2. Meat	139.5	4.49	401.9	6.62	1430.1	12.75
3. Dairy Products	214.0	6.90	256.4	4.23	654.1	5.83
4. Eggs	110.0	3.54	226.0	3.72	118.2	1.05
5. Fish	106.2	3.42	240.3	3.96	474.2	4.23
6. Wheat	421.0	13.56	543.5	8.96	599.7	5.35
7. Rice	41.7	1.34	41.5	0.68	69.6	0.62
8. Barley Maize	294.7	9.50	454.0	7.49	885.7	7.90
9. Other Cereals	130.5	4.20	207.0	3.41	251.8	2.24
10. Fruits & Vegetables	643.7	20.74	1408.9	23.22	2341.9	20.88
11. Feed-stuffs	113.3	3.65	301.5	4.97	947.2	8.44
12. Hides, Skins, & Furs	233.0	7.51	429.5	7.08	618.3	5.51
13. Wood, Cork, & Pump	572.2	18.44	1286.3	21.20	2117.5	18.88
14. Total	3103.6	100.00	6067.8	100.00	11216.6	100.00

^aSource: Derived from world trade matrices constructed from (91-93).

1953		Total Exports 1961		1969	
value	%	value	%	value	%
14.8	1.03	84.3	3.03	358.9	5.66
169.8	11.87	347.2	12.48	1018.8	16.05
256.0	17.89	384.7	13.82	916.9	14.45
74.0	5.17	126.7	4.55	112.1	1.77
49.5	3.46	49.9	3.41	190.0	2.99
28.9	2.02	81.2	2.92	570.9	9.00
65.9	4.61	38.0	1.37	45.5	0.72
9.5	0.66	158.1	5.69	494.6	7.79
465.1	32.51	875.1	31.45	1571.4	24.76
465.1	32.51	875.1	31.45	1571.4	24.76
57.9	4.05	111.1	3.99	310.8	4.90
60.3	4.22	115.5	4.15	167.6	2.64
78.7	5.50	180.4	6.48	239.1	3.77
1430.6	100.00	2782.9	100.00	6346.4	100.00

Table III.8. The commodity composition of EFTA trade in temperate zone products, 1953-1969 (value in million dollars)^a

Commodities	Total Imports					
	1953		1961		1969	
	value	%	value	%	value	%
1. Live Animals	70.2	1.69	158.8	2.99	140.3	2.25
2. Meat	896.8	21.63	954.6	18.00	1178.4	18.92
3. Dairy Products	399.4	9.64	450.3	8.49	479.3	7.69
4. Eggs	90.8	2.19	52.5	0.99	25.2	0.40
5. Fish	69.5	1.68	192.8	3.64	315.0	5.00
6. Wheat	408.8	9.86	369.1	6.96	395.1	0.34
7. Rice	30.3	0.73	34.3	0.65	38.3	0.61
8. Barley Maize	307.8	7.43	305.9	5.77	305.7	4.91
9. Other Cereals	112.0	2.70	130.4	2.46	113.4	1.89
10. Fruits & Vegetables	631.4	15.23	1108.5	20.90	1344.0	21.58
11. Feed-stuffs	250.2	6.04	276.3	5.21	366.9	5.89
12. Hides, Skins, & Furs	170.0	4.15	198.8	3.75	255.1	4.10
13. Wood, Cork, & Pulp	705.6	17.02	1070.5	20.19	1272.5	20.43
14. Total	4145.3	100.00	5302.8	100.00	6229.2	100.00

^aSource: Derived from world trade matrices constructed from (91-93).

Total Exports					
1953		1961		1969	
value	%	value	%	value	%
55.9	3.07	185.2	7.53	180.9	5.18
266.7	14.65	407.0	16.54	646.6	18.51
290.5	15.96	306.5	12.46	296.1	8.48
72.1	3.96	44.8	1.82	21.9	0.63
147.3	8.09	262.3	10.66	394.9	11.31
29.3	1.61	21.5	0.87	17.9	0.51
2.7	0.15	0.0	0.00	0.0	0.00
30.4	1.67	21.9	0.89	29.1	0.83
40.2	2.21	77.2	3.14	105.0	3.01
56.7	3.11	68.7	2.79	139.0	3.98
46.9	2.58	44.5	1.81	152.7	4.37
56.8	3.12	114.8	4.67	177.2	5.07
724.6	39.80	905.9	36.82	1331.7	38.12
1820.5	100.00	2460.2	100.00	3493.1	100.00

about 23 percent of imports over time, while there was an increase from 17 percent of exports in 1953 to about 24 percent in 1969. The primary sources of supply for EEC imports of live animals and meat have been in order of importance EFTA, the EEC, the communist block, Latin America and the United States but the share of all countries except the EEC and the communist block has diminished over time. The major customers of EEC exports have been the EEC itself, the United States and EFTA but the EEC substantially increased its share over time to the expense of the other countries' share.

The major suppliers to EFTA have been other Western Europe, EFTA itself and Latin American countries with a decline in importance of the latter group and an increase in EFTA's share over time. EFTA has exported primarily to the EEC, the U.K., other Europe and the U.S., but a slight decline has been observed in the shares of the U.K. and the EEC. Overall we can observe that trade in livestock and meat products has more than doubled during our sample period, a phenomenon that is consistent with the high elasticities of demand for these products,⁴ a strong upward trend of consumption per capita in the EEC and an increase in production that has not kept pace with the increase in per capita consumption in some EEC countries, while the U.K. has been able to substantially increase domestic production to the expense of imports.

⁴For some estimates of the income elasticity of demand we relied on information available in Marsh and Ritson (59, p. 170).

Fish:

Fish has not increased as a proportion of EEC exports while imports increased slightly from 1953 to 1969. In the EFTA group, exports increased their share from 8 to 11 percent, while imports jumped from 1 percent in 1953 to 5 percent in 1969 to total EFTA imports of temperate zone products. EEC's share in its own exports increased from 32 percent to 70 percent in 1969 while EFTA and the EEC have been the major sources of fish imports of the EEC. No significant change took place in the origin and distribution of fish trade of EEC countries.

Dairy products and eggs:

Dairy products and eggs have declined in importance in EEC's trade as well as EFTA's trade over our sample period. The EEC has been increasingly self sufficient in these products while EFTA's trade has retained its customers' share over our period. Major importers of EFTA's exports have been the EEC and EFTA itself, while imports originated from other Europe and developed countries, EFTA and the EEC.

Cereals:

Trade in cereals has declined in importance in the EEC and EFTA--a trend that is associated with the decline in consumption per capita in the developed economies and a negative income elasticity of demand.

Feed-stuffs:

On the contrary, feed-stuffs have increased their share of the EEC imports and EFTA's exports. In terms of the origin of EEC's imports of cereals some notable changes have taken place. The U.S. increased its

share in the 1953-61 period but sharply dropped in the subsequent period and the same trend has been observed in the share of other developed countries. The same can be said for the share of the U.S. and other Developed Countries in EFTA's imports. An increasing tendency towards self sufficiency has been observed in both the EEC and EFTA over our sample period. No distinct trend can be noticed in the origin and distribution of EFTA's and EEC's trade over our sample period.

Fruits and vegetables:

EFTA has been increasingly a deficit area in fruits and vegetables and in 1969 imports accounted for 22 percent of total EFTA imports of temperate zone products.

Wood cork and pulp:

Wood cork and pulp accounted for about 20 percent and 39 percent of EFTA's imports and exports respectively in 1969.

Hides, skins and furs:

Hides, skins and furs have retained their share of about 5 percent in the trade of both the EEC and EFTA.

The EEC has seen its share of exports of fruits and vegetables to decline and has retained the share of imports in the total EEC trade of temperate zone products. The EEC has been a deficit area in forest products with a share of about 20 percent in total imports and only 4 percent in total exports. The EEC has been increasingly self sufficient in fruits and vegetables while the EFTA countries have depended upon imports from the EEC and other developed countries, while no appreciable change

took place in the distribution of their exports. The EEC has become more and more the principal outlet of EFTA's exports of forest products thus strengthening the commercial ties between the two groups with respect to wood, cork and pulp.

D. Patterns of Intra-EEC Trade in Temperate Zone Products

The major exporters within the EEC group in 1969 were France and the Netherlands satisfying together about 65 percent of intra-EEC imports and the most important importing countries were Germany and Italy, receiving about 61.6 percent of intra-Community trade in temperate zone commodities. The analysis of this section is based on the information derived from Tables III.2, III.3, and III.4.

Over the 1953 to 1969 period, the most notable changes in imports from intra-Community sources have been the relative decline in the shares of Italy and the Netherlands (almost half their share in 1953) and the substantial increase in importance of France, that more than tripled its share, and Germany, that doubled its share, as suppliers of temperate zone goods to other Community members. While the major recipients of exports from other EEC countries in 1969, were Germany and Italy, only Italy more than doubled its share of intra-EEC imports, and the remaining member countries had only minor shifts in their relative shares.

If we now turn to the commodity composition of intra-Community trade we can observe that the largest importers of livestock and meat have been Germany, France and Italy and the origin of these imports has been primarily from France and the Netherlands. The total value of intra-EEC livestock and meat trade has been 1,127 million dollars in 1969 and 48 and

220 million dollars in 1953 and 1961 respectively. This rapid increase in trade can be explained by the relatively high income elasticities of demand for meat products (estimated at about 0.5)⁵ and the resulting rapid increase in consumption per capita.

The largest exporters of fish and fish products to the EEC have been the Netherlands and Germany and their primary customer has been France. This is a product whose consumption per capita has been declining in all EEC countries with the notable exception of France and Italy.

Intra-community trade of dairy products has risen very rapidly in the 1961-69 period as compared to the preceding one, and the largest intra-EEC exporters have been France and the Netherlands in 1969, with a complete reversal in France's position which was the smallest exporter in 1953. The largest importers have been Italy and Germany in 1969, with a decline in the position of Belgium-Luxembourg as an importer over the period under consideration. Germany and the Netherlands have been the only countries where consumption per capita has been declining.

Eggs have been one of the few products whose trade has declined in absolute value over the last decade. The main importer in the Community has been Germany, while the major intra-EEC sources of supply have been the Netherlands and Belgium-Luxembourg, with the latter rising more rapidly over our sample period. Even though consumption per capita has been rising over this period, the slow trend in trade of eggs can be explained by a rapid increase in domestic production (with the

⁵From Marsh and Ritson (59, p. 170).

exception of the Netherlands).

Cereals have been a commodity group with a negative income elasticity of domestic demand and consumption per capita has been following a declining trend in all EEC countries. Net exporter in the Community has been France, while Germany and the Netherlands have been the traditional importers of intra-EEC cereals with Italy becoming increasingly more of a net importer.

Feed-stuffs have had a rapid increase in intra-EEC trade, a trend that should be linked to the increased per capita consumption of Livestock and Meat products. France and the Netherlands have been the largest exporters while all countries have been strong importers, with Italy rising over our sample period due primarily to the fact that Italian meat production has had the highest rise over the last decade.

Fruits and vegetables are commodities with high elasticity of demand in the EEC and total intra-Community trade has increased quite rapidly from 199 million U.S. dollars in 1953 to 467 and 973 million dollars in 1961 and 1969 respectively. The more notable exporters have been Italy and the Netherlands while their largest customers have been Germany and Belgium-Luxembourg. France has seen its total intra-EEC imports increase very slowly over time from 26 million dollars to 48 and 49 million in 1961 and 1969 respectively.

Hides, skins, furs and forest products are different than other temperate zone goods in that they are raw materials to the tanning and wood and paper industries and therefore their demand depends upon the consumption of their respective finished products. In intra-EEC trade

France and Germany have been the largest exporters of hides, skins and furs with a notable decline of Italy over time as an exporter and shift into the largest importer in 1969 along with Germany and Belgium-Luxembourg.

Intra-Community trade in wood, cork, and pulp has risen rapidly from 31 million dollars in 1953 to 112 and 166 million in 1961 and 1969 respectively. France and Germany have been the largest exporters while Germany has risen to be the largest importer as well primarily from France. In 1953 the largest importer from the EEC was Belgium-Luxembourg.

E. Constant Market Shares Analysis of EEC's Exports and Imports of Temperate Zone Products

The determinants of exports:

We shall attempt now to arrive at some tentative generalizations on the structure of trade in temperate zone products. In particular we are concerned here with identifying the most important factors to which we can attribute changes in EEC's exports. In general, one would expect a country's exports may fail to grow as rapidly as the world total exports for four basic reasons: a) because of a decline in total world demand; b) because the country's exports may be concentrated in those commodities for which world demand grows relatively slowly; c) because exports may be destined to slowly growing regions and d) because the country, for various reasons, has not been able to compete effectively in the world markets.

As can be seen in Table III.9, EEC exports of temperate zone products have grown rapidly over our sample period and more rapidly than both total

Table III.9. Growth of total exports in temperate zone products
(millions U.S. dollars)

Year	Total World Trade		EEC		EFTA		Total World (without EEC)	
	Value	%	Value	%	Value	%	Value	%
1953	123305	100	1431	100	1821	100	9200	100
1961	19016	154	2783	194	2460	135	12945	141
1969	27511	224	6346	443	3493	192	16294	177

World and EFTA exports. EFTA exports on the other hand have grown less rapidly than total World and the EEC exports. Similar to the case of a decline of a country's share in world exports, we can attribute a comparatively better export performance to four factors: a) an increase in total world demand; b) a concentration of the country's exports in commodities for which world demand is growing relatively more rapidly; c) the fact that exports may be destined to fastly growing regions and d) because the country's competitiveness in world markets has increased.

In the literature of International Trade various studies (5,6,83,89) have attempted in the past to separate the factors that could explain changes in a country's export share in world markets. These original studies ascribed export growth to either structural or competitive forces, by separating the change that would have occurred if the share of the country in question in world markets had remained constant over time, from a residual force attributed to changes in the country's

competitiveness.

More recently, further attempts to disaggregate the forces that could explain a country's export growth have been undertaken (53,76,77,84). In our analysis we shall follow the empirical procedure of these last studies. The basic model underlying this approach can be shown as follows:⁶

$$X_{1.} - X_{..} = rX_{..} + \left(\sum_{i=1}^n r_i X_{i.} - rX_{..} \right) + \quad (11.1)$$

Total Growth Commodity
Effect Effect

$$+ \left(\sum_{i=1}^n \sum_{j=1}^n r_{ij} X_{ij} - \sum_j r_j X_{j.} \right) + (X_{1.} - X_{..} - \sum_{i=1}^n \sum_{j=1}^n r_{ij} X_{ij})$$

Market Effect

Competitive Effect

where:

$i = 1, 2, \dots, n$ number of commodity groups

$j = 1, 2, \dots, m$ number of importing regions

$X_{..} = \sum_i \sum_j X_{ij}$ Total exports of the analyzed country at year 1

$X_{1.} = \sum_i \sum_j X'_{ij}$ Total exports of the analyzed country at year 2

X_{ij} = exports of good i to region j at year 1

r = % increase in world exports of all goods to all destinations from year 1 to year 2

⁶This is the model presented in (53, pages 171-176).

r_i = % increase in world exports of commodity i from year 1 to 2

r_{ij} = % increase in world exports of commodity i to region j
from year 1 to year 2.

The model requires some further explanation. The left-hand side of Equation (11.1) is the change of the country's total exports from the base year to the final year. This is equated to the sum of four components: 1) the Total Growth effect; 2) the Commodity effect; 3) the Market effect and 4) the Competitive effect. The Total Growth effect indicates by how much exports would increase if the country had just maintained its share of total world exports. The Commodity effect attempts to capture the effect on exports of the country's concentration on rapidly growing commodities and similarly the Market effect accounts for the growth in exports due to the market distribution of the country's exports. The Competitive effect is a residual between the actual export growth and the growth that would have taken place if the country had maintained its share in the export of each commodity to each destination.⁷ The Commodity and Market effects would be negative if the country concentrated in slowly growing commodities and more stagnant regions respectively. A positive Competitiveness effect would imply the country's capacity to maintain and improve its position in world markets.

⁷The "Constant-Market-Shares" analysis of export growth is not without limitations as it has been pointed out in the literature (53,77). It would appear that the components of (11.1) are sensitive to the degree of commodity and regional aggregations as well as the choice of the time period.

Unfortunately there is no straightforward explanation of the reasons for a strong competitiveness effect. Various factors, like changes in relative prices, efficiency in marketing methods or advantages in geographical location can account for a strong competitive effect. Further analysis is, therefore, necessary in order to identify the exact conditions of a country's successful export performance in world markets.

We have utilized the Constant-Market-Shares approach in order to identify the changes in the commodity composition, market distribution and competitiveness in world trade of EEC's exports of temperate zone products. The calculations were made according to model (II.1) and were based upon thirteen commodity groups and upon fifteen importing areas.⁸ The results of the detailed calculations are given in Table III.11 while the final results have been summarized in Table III.10.

It is clear from our results that in the period between 1953 and 1961, the increases in the value of world trade explained more than 40 percent of the increase in EEC's exports, while from 1961 to 1969 they explained them by 20 percent. The percentage explained for the two periods combined was about 22 percent. This decline in importance of the Total Growth effect in explaining the increase in EEC's exports in 1961-69 as compared to 1953-61 can be attributed not only to a sharp

⁸The importing regions were: Associated to EEC; U.K.; Other EFTA; U.S.; Australia, N. Zealand, S. Africa; Canada; Japan; Other Developed; Communist Block; Associated L.D.C.'s to the EEC; Latin America; Africa; Asia, Middle East; Maghreb; Other World.

Table III.10. Analysis of changes in EEC's exports of temperate zone products: 1953-69 (millions of U.S. dollars)

	1953-61		1961-69		1953-69	
	Value	%	Value	%	Value	%
Increase in EEC's exports due to:	1352	100.00	3563	100.00	4915	100.00
1. Total Growth Effect	587	43.42	724	20.32	1102	22.42
2. Commodity Effect	-97	-7.17	70	1.96	1096	22.30
3. Market Effect	7	0.52	-366	-10.27	-1362	-27.71
4. Competitive Effect	855	63.24	3135	87.99	4079	82.99

Table III.11. Derivation of Table III.10, (million U.S. dollars)

Commodity Groups	Total World Exports (except EEC)			X_i	X_i'
	(1)	(2)	(3)	(4)	(5)
	1953	1961	1969	1953	1961
1. Barley-Maize	560	694	798	9	158
2. Other cereals	584	697	708	100	185
3. Dairy products	724	942	1045	256	355
4. Eggs	153	95	63	74	127
5. Feedstuffs	355	458	668	58	111
6. Fish	443	784	1243	49	95
7. Fruit & Vegetables	1348	1993	2880	465	875
8. Hides, skins and furs	403	529	654	60	116
9. Live Animals	145	466	408	15	84
10. Meat	1216	1643	2519	170	347
11. Rice	532	278	369	66	38
12. Wheat	1085	1855	1508	29	81
13. Wood, Cork and Pulp	1649	2522	3426	79	130
14. Total	9200	12945	16294		

$(\frac{2}{1}-1)$	$(\frac{3}{2}-1)$	$(\frac{3}{1}-1)$	$r_i v_i$	$r_i v_i$	$r_i v_i$	$r_{ij} - v_{ij}$		
r_i	r_i	r_i	53-61	61-69	53-69	53-61	61-69	53-69
0.24	0.15	0.43	2	24	4	0	4	0
0.19	0.02	0.21	19	4	21	45	-17	45
0.30	0.11	0.44	77	42	169	84	51	124
-0.38	-0.34	-0.49	-28	-43	-75	7	5	4
0.29	0.40	0.88	17	51	98	0	26	32
0.77	0.59	1.81	38	56	172	19	17	29
0.48	0.45	1.14	223	394	998	170	194	307
0.31	0.25	0.64	19	29	74	9	16	0
2.21	-0.12	1.81	33	-10	152	16	-5	12
0.35	0.53	1.07	60	184	371	115	107	241
-0.48	0.33	-0.31	-32	13	-12	10	4	15
0.70	-0.18	0.37	20	-15	32	10	-3	3
0.53	0.36	1.08	42	65	194	12	29	24
0.42	0.20	0.09	470	794	2198	497	428	836

decline of the rate of growth of total world exports (except EEC) from 0.41 to 0.26, but also an increase of the growth of EEC's exports as can be observed in Table III.10.

The changes due to the Commodity and Market effects were comparatively small and showed some reversal over time. In the first period both effects were negligible with a favorable contribution of the market distribution component and a slightly unfavorable influence of the commodity composition effect. In the second period there was a higher (about 10 percent) but unfavorable contribution of the Market effect while the commodity composition effect remained negligible but somewhat favorable.

Finally, the residual portion that provides a measure of the competitiveness of exports in world markets has been the most important component of changes in EEC's exports of temperate zone products. It accounted for more than 60 percent during the 1953-61 period and increased sharply to almost 90 percent in the subsequent period. The percentage for the two periods combined was about 83 percent. It could be observed here that the 1961-69 period coincides with the establishment of the Common Agricultural Policy in the EEC. Could we attribute the increase in the competitiveness component to the influence of the CAP? We cannot provide an answer in this context, since there is no way, from the Constant-Market-Shares approach only, to identify the causes of shifts in the various components. An attempt to provide some quantitative evidence of the CAP's influence on trade of temperate zone products will be made in the following chapter.

The determinants of imports:

We shall apply now the same methodology in order to identify the most important factors to which we can attribute changes in EEC's imports of temperate zone products. As can be seen from Table III.12, EEC imports have grown faster than world and EFTA imports over time. One can observe also a slower increase in the 1961-69 period as compared to the 1953-61 period. EFTA imports have grown less fast than World Trade and have experienced an absolute decline in the latter period.

Table III.12. Growth of imports of temperate zone products (millions U.S. dollars)

Year	Total World Trade		World Without EEC		EEC		EFTA	
	Value	%	Value	%	Value	%	Value	%
1953	12305	100	10872	100	3104	100	4145	100
1961	19016	154	17179	158	6068	195	5303	128
1969	27511	224	21161	195	11217	361	5191	125

The model utilized here is basically the same as (II.1) with the only difference that X has to be interpreted as imports and r as the % increase in World imports. The results of the detailed calculations are available in Table III.14 and the final results have been summarized in Table III.13.

It can be observed from our results that the total growth effect,

Table III.13. Analysis of changes in EEC's imports of temperate zone products (millions of U.S. dollars)

	1953-61		1961-69		1953-69	
	Value	%	Value	%	Value	%
Increase in EEC Imports:	2964	100.00	5149	100.00	8113	100.00
Due to:						
1. Total Growth Effect	1800	60.73	1396	27.11	2949	36.35
2. Commodity Effect	-13	-0.44	327	6.35	-24	-0.30
3. Market Effect	-603	-20.31	-416	-8.08	-693	-8.54
4. Competitive Effect	1779	60.02	3842	74.62	5881	72.49

Table III.14. Derivation of Table III.13.

Commodity Groups	Total World Imports (except EEC)			1953	1961
	1	2	3		
	53	61	69	X_1	X_1'
1. Barley-Maize	846	991	1189	295	455
2. Other Cereals	615	718	611	131	207
3. Dairy Products	685	813	782	214	756
4. Eggs	189	195	69	110	226
5. Feedstuffs (fodder)	409	648	1304	113	302
6. Fish	499	1577	1527	106	240
7. Fruits & Vegetables	1526	2528	3651	644	1409
8. Hides, Skins & Furs	576	843	1109	233	429
9. Live Animals	213	652	757	83	270
10. Meat	1186	1698	2930	140	402
11. Rice	508	282	393	42	42
12. Wheat	1477	2306	1536	421	543
13. Wood, Cork & Pulp	2143	3628	5303	572	1286
Total	10872	17179	21161	3104	6068

r_1	r_2	r_3	53-61	61-69	53-69		$r_{ij}x_{ij}$	
2/1-1	3/2-1	3/1-1	r_1x_i	r_2x_i	r_3x_{ii}	53-61	61-69	53-69
.17	.20	.41	50	91	121	4	86	91
.17	-.15	-.01	22	-31	-1	-5	-23	-14
.19	-.04	.14	41	-10	30	23	-5	16
.03	-.65	-.63	3	-147	-69	9	-80	-24
.58	1.01	2.19	66	305	248	45	222	157
2.16	-.03	2.06	229	-7	218	50	89	93
.66	.44	1.39	425	620	895	365	343	610
.46	.32	.93	107	137	217	84	105	161
2.06	.16	2.55	171	43	212	37	68	212
.43	.73	1.47	60	293	206	49	171	154
-.44	.39	-.23	-18	16	-10	9	19	-1
.56	-.33	.04	236	-179	17	161	-150	0
.69	.46	1.47	395	592	841	354	462	777
.58	.23	.95	1787	1723	2925	1185	1307	2232

i.e., the increase in EEC imports that would have taken place at the world (without the EEC) rate of growth, explained more than 60 percent of the increase in EEC's imports from 1953 to 1961. In the subsequent time period, this factor explained only 27 percent while for the whole period from 1953 to 1969 the total growth effect explained about 36 percent of EEC import growth. This decline can be attributed to the considerable slowdown of total world imports (from a rate of growth of 0.58 to 0.23) as well as a much faster increase of EEC imports in the second period under consideration.

The commodity effect, or in other words the concentration of EEC imports in those commodities for which the world supply is growing relatively more rapidly, has had a negligible contribution to the increase of EEC imports during the 1953-61 period but showed a slight improvement in the subsequent period from -0.44 percent to about 6 percent. The market effect contributed negatively to the growth of total EEC imports accounting for about 20% in the first period under consideration but declined substantially to about 8 percent in the latter period. This would tend to imply that the EEC shifted its imports towards those sources that saw their share in world imports increase over time.

Finally the "competitive effect" has been the major explanatory component of the increase in EEC's imports and showed a tendency to increase over time from about 60 percent to about 74 percent in the latter period. This effect consists of the difference between the actual increase in EEC imports and the increase that would have taken place if imports had grown at the world (except the EEC) rate of growth for each

commodity and each country of origin. H indicates the degree to which EEC's imports differ from the pattern of world trade. A positive value indicates a faster growth of EEC imports than the growth that would have materialized if they had followed the change in the pattern of world trade. An increase over time of the "competitive effect" should indicate a greater divergence of EEC imports from the world trade pattern.

Table III.15 presents the divergence of the actual and hypothetical EEC imports by country of origin under the assumption that imports have been growing at the average world rate of growth. The major difference between actual and hypothetical imports occurred in the 1961-1969 period for imports from the EEC, U.K., Australia, New Zealand, S. Africa, Canada, Japan, the Communist Block, Asia and Middle East which grew faster than the world average. Imports from these countries accounted for about 86 percent of the total discrepancy between actual and hypothetical figures.

Table III.15. Change in EEC Imports by origin (million U.S. dollars)

From	1953-61		1961-69	
	Actual	Hypothetical ^a	Actual	Hypothetical ^a
EEC	852	525	2794	1793
Assoc. EEC	-12	-16	86	63
U.K.	40	15	53	11
Other EFTA	301	104	298	301
United States	402	311	345	324
Austr., N.Z., S.A.	109	55	38	-25
Canada	33	-5	41	-33
Japan	27	6	28	2
Other Europe	235	201	78	34
Communist Block	336	280	560	173
Assoc. L.D.C.'s	59	66	240	205
Latin America	239	14	535	401
Africa	197	82	-144	-133
Asia, Middle East	98	41	262	50
Maghreb	47	47	-105	-81
Other World	-2	-16	45	10
Total	2961	1710	5154	3095

^a Imports growing at the average world rate of growth of imports.

IV. TRENDS IN PRODUCTION, CONSUMPTION AND TRADE IN TEMPERATE ZONE PRODUCTS AND THE STATIC EFFECTS OF THE CAP ON EEC TRADE

The analysis of the pattern of trade in agricultural commodities discussed in Chapter III provides a basis for the investigation of the impact of the Common Agricultural Policy on production, consumption and trade of temperate zone goods. The purpose of this section will be to assess the effect of European Economic Integration, and particularly of the CAP, upon the production of and the demand for agricultural commodities along with the resulting effect upon the trade flows of the EEC in temperate zone products.

We will first analyze the major trends in the Common Market of production, consumption and trade of temperate zone goods over the 1953 to 1969 period. In the second section we will present a brief survey of the welfare implications of the formation of Customs Unions and we will discuss alternative approaches and findings in the literature in measuring the effects of European Economic Integration. The third part consists of a concise summary of the major empirical studies of the effects of the CAP on agricultural production and trade in the Common Market. Finally, we will present an empirical framework, consisting of estimated import demand functions, which constitutes an attempt to capture the static effect of the CAP on EEC trade of temperate zone products.

A. Trends in Agricultural Production, Consumption and Trade in the EEC

The effect of the CAP has been not only to increase the degree of protection of some agricultural products from foreign suppliers, as we saw in Chapter II, Section B of this study, but also to stimulate production within the Community by offering higher prices to farmers than would prevail in a freer market. The increasing production in some commodities, encouraged by high domestic prices, has meant that the Community has now reached a higher degree of self-sufficiency and growing surpluses in important groups of regulated agricultural products. The possibility exists that these trends have intensified competition in world markets and exerted a downward pressure on world prices. Furthermore, one would expect a reduction of imports from outside sources and the necessity to dispose of unsold goods to the world market, subsidized by growing export payments or restitutions (28).

Table IV.1 present some trends in production, consumption and trade in selected agricultural products in the EEC. The first column gives production in thousand metric tons, column 2 the change in stocks, columns 3 and 4 exports and imports respectively and column 7 total consumption. Finally, column 5 shows imports from intra-EEC while column 6 imports from extra-Community sources. As may also be seen from Table IV.2, the EEC had achieved by 1968 a high degree of self-sufficiency for a large number of agricultural commodities. From all commodity groups in this table, only fish and fruits and vegetables are not covered by the variable-levy system of protection. Fish imports are protected by a common external tariff in the neighborhood of 20 percent. Fruits and vegetables are

Table IV.1. Trends in production, consumption and trade in the EEC, or various temperate zone products, 1953-1969 (1000 metric tons)^a

Year	Production (1)	Change in Stocks (2)	Exports (3)	Imports (4)	Intra- Imports (5)	Extra- Imports (6)	Consumption (7)
<u>Total Meat (SITC: 01)</u>							
53/54	6950	-	-259	252	74	178	6943
61/62	9336	13	-545	1022	85	937	9826
68/69	11800	11	-888	1884	775	1109	12807
<u>Milk (SITC: 022)</u>							
53/54	77160	76	-349	92	84	8	76979
61/62	94234	61	-755	188	147	41	93728
68/69	97977	-43	-1361	760	699	61	97376
<u>Butter (SITC: 023)</u>							
53/54	858	4	-52	55	29	26	865
61/62	1112	-2	-91	58	19	39	1077
68/69	1388	-107	-160	89	69	20	1210
<u>Cheese (SITC: 024)</u>							
53/54	1075	-	-127	131	68	63	1079
61/62	1421	-5	-190	236	124	112	1462
68/69	2020	-19	-308	280	223	57	1973

^aNote the following definitions: (7) = (1) + (2) - (3) + (4) and (4) = (5) + (6). Source: (64-67).

Table IV.1. (Continued)

Year	Production (1)	Change in Stocks (2)	Exports (3)	Imports (4)	Intra- Imports (5)	Extra- Imports (6)	Consumption (7)
<u>Eggs (SITC: 025)</u>							
53/54	1416	-	-115	190	114	76	1491
61/62	1909	-6	-256	421	197	224	2068
68/69	2497	-	-80	228	151	77	2645
<u>Fish (SITC: 03)</u>							
53/54	2400	-	-425	477	140	337	2452
61/62	2506	1	-477	693	206	487	2723
68/69	2630	-	-562	1035	249	786	3103
<u>Wheat (SITC: 041)</u>							
53/54	22064	-	-1405	4978	212	4766	25637
61/62	23060	-193	-3189	6927	577	6350	26991
68/69	32267	-2023	-8572	6509	484	6025	28181
<u>Rice (SITC: 042)</u>							
53/54	1003	5	-290	191	105	86	909
61/62	659	40	-352	410	41	369	757
68/69	580	-45	-238	414	80	334	711
<u>Barley (SITC: 043)</u>							
53/54	4210	-92	-174	2000	40	1960	5944
61/62	9227	698	-2316	2142	1035	1107	9751
68/69	15338	-338	-4150	3484	2140	1344	14334

Table IV.1. (Continued)

Year	Production (1)	Change in Stocks (2)	Exports (3)	Imports (4)	Intra- Imports (5)	Extra- Imports (6)	Consumption (7)
<u>Maize (SITC: 044)</u>							
53/54	4087	162	-296	2007	48	1959	5960
61/62	6442	-454	-523	5006	407	4599	10471
68/69	9648	159	-3382	11342	1409	9933	17767
<u>Other Cereals (045, 046, 047, 048)</u>							
53/54	13305	542	-1305	1800	196	1604	14342
61/62	10905	1015	-192	2929	566	2363	14657
68/69	12749	-393	-678	2285	790	1495	13963
<u>Fruits & Vegetables (SITC: 05)</u>							
53/54	79062	-74	-4010	5567	1727	3840	80545
61/62	81799	515	-7041	9897	3252	6645	85170
68/69	81294	286	-8366	13873	5374	8499	87087

Table IV.2. Degree of self-sufficiency in selected agricultural products in the EEC, EFTA, and U.K.^{a,b}

	EEC			EFTA			U.K.		
	53/54	61/62	68/69	53/54	61/62	68/69	53/54	61/62	68/69
1. Total meat	1.00	0.95	0.92	0.84	0.88	0.90	0.61	0.64	0.67
2. Milk	1.00	1.01	1.01	1.00	1.00	1.00	0.99	0.99	1.00
3. Butter	0.99	1.03	1.15	0.78	0.89	0.53	0.08	0.12	0.11
4. Cheese	1.00	0.97	1.02	0.81	0.98	0.89	0.30	0.48	0.42
5. Eggs	0.95	0.92	0.94	1.00	0.99	0.99	0.89	0.98	0.99
6. Fish	0.98	0.92	0.85	1.22	1.20	1.11	0.93	0.82	0.83
7. Wheat	0.86	0.85	1.14	0.54	0.52	0.59	0.37	0.39	0.44
8. Rice	1.10	0.87	0.82	0.54	0.48	0.42	0.01	0.01	0.01
9. Barley	0.71	0.95	1.07	0.77	0.92	0.98	0.67	0.94	0.96
10. Maize	0.69	0.62	0.54	0.19	0.14	0.17	-	-	-
11. Other Cereals	0.93	0.74	0.91	0.90	0.90	0.98	0.91	0.92	0.96
12. Fruits & Vegetables	0.93	0.92	0.91	0.74	0.71	0.70	0.60	0.56	0.58

^aThe degree of self-sufficiency is measured as $\frac{\text{production}}{\text{consumption}}$.

^bSource: (64-67).

protected by a range of instruments including quality standards, import duties, export subsidies and provisions for market intervention by the member states.¹

Consumption of fish and fish products has increased more rapidly than production in the community resulting into a notable reduction of self-sufficiency and a stimulation of imports during the 1961-68 period. Even though no apparent evidence exists about trade diversion during the above period, the EEC imported considerably less in the 1961-69 period from its major source of supply, the EFTA group.

The gap between supply of, and demand for fruits and vegetables has increased sharply, due to a drop in production and a steady increase in consumption in the 1961-68 period. A slight decline in self-sufficiency to about 91% was accompanied by a significant rise in total imports.

Among the variable-levy commodities there was no change in self-sufficiency of milk, while the degree of self-sufficiency dropped for meat, rice and maize. The community became increasingly more self-sufficient in the remaining commodities, with the major increases in the 1961-68 period registered by wheat and other cereals (that included rye, oats and other coarse grains), followed by barley and butter.

Community production of meat has not kept up with demand. Due to the high elasticity of demand, consumption of meat in the community increased by about 30%, while production increased by 26% in the 1961-68 period. There was also a very marked acceleration of imports from intra-EEC sources

¹ A detailed analysis of the development of the individual commodity groups under the CAP was made by Berntson et al. (9).

that would indicate a significant degree of trade diversion.

Production rose faster than demand for dairy products and eggs with the output of butter rising by 25% in the 1961-68 period, the output of cheese by 42% and the output of eggs by 31% over the same period. As we saw in Chapter II, Section B, the protection accorded to dairy products by the variable levy system was significant and is consistent with the observed trend towards self-sufficiency for these commodities. Total imports of all dairy products increased considerably, while imports of eggs declined in the 1961-68 period. Considerable stimulation appears to have taken place as well over the same period in intra-EEC imports of dairy products.

Among grains, rice was the only commodity with steadily declining output and demand over the period under consideration. Rice has been less protected by CAP arrangements as compared with other commodities and the degree of protection has fluctuated, resulting in a wide fluctuation of total output over the period. Total consumption has dropped slightly and a certain amount of trade diversion can be detected in the 1961-68 period.

Production of wheat in the EEC has been rising (by 40%) after the implementation of the CAP, stimulated both by high producer prices and high yields, while consumption has increased at a slower rate (about 4%). The most notable change over the same period has been the shift for the community from a net importer to net exporter of wheat.

Consumption for barley rose by 47% but production rose faster (66%) in the 1961-68 period with a significant rise in exports of this commodity.

In the case of maize the rise in consumption (70%) exceeded the increase in output (50%) and consequently there was a considerable increase in imports. For the remaining coarse grains, output increased by 17% in the 1961-68 period, thus reversing a previous downward trend. Consumption over the same period declined with a significant stimulation of exports and a decline in total imports.

Sizable surpluses of some commodities--notably dairy products--have accumulated within the community and export subsidies or restitutions--principally for dairy products, wheat, sugar, meat and poultry--have been used extensively to dispose the unsold goods to the world markets. For the 1968-69 fiscal year the costs of these restitutions were slightly over \$1 billion, with dairy products and grains accounting for about 75% of the total costs.

B. The Theory of Customs Unions and Methods Used to Measure Integration Effects

The theoretical welfare implications of economic integration were first systematically studied by Viner (98) and subsequently developed and generalized by Marsh (60), Balassa (1), Vanek (96) and H. G. Johnson (36). It has been traditional to distinguish between the long-run or dynamic effects and the short-run or static effects of integration.

In the analysis of the dynamic effects the levels of income and employment and the rate of growth are treated as variables that are primarily affected by technological progress, the allocation of investment and the possible creation of scale economies due to the increased size of the market. Usually the dynamic effects will contribute positively to economic

welfare. Very few attempts have been made to estimate the dynamic effects of integration empirically even though they may prove to be much more important than the static effects (23, p. 7 and 50, p. 917).

From a static viewpoint, given the levels of output and employment, the changes in trade that would result from integration can be divided into trade creation, where intra-union trade increases, involving a shift from a high-cost producer to a lower cost producer within the union, and trade diversion, where intra-union trade will increase due to a shift from a low-cost producer outside the union to a higher-cost producer within the union. Trade creation will cause an increase in welfare while trade diversion will reduce welfare.

Several attempts have been made to estimate the static effects of economic integration. The earlier studies, when trade data were still not available, followed primarily the ex ante method which consists of utilizing known or assumed values of parameters and variables in order to evaluate the possible effects of integration on trade even before the union has been established. The ex ante approach was utilized, among others, by Verdoorn (97) and Janssen (35) who worked in the context of a general equilibrium approach and made various estimates of how export supply and import demand would react to tariff changes.

Later studies, as data became more readily available, made use of ex post approaches that consist of looking at actual changes in international trade patterns over the period of existence of the customs union and identifying the changes that can be attributed to the Union. The literature that made use of the ex post methodology has been surveyed by

Balassa (4), the EFTA Secretariat (23), Williamson and Bottrill (102) and more recently by Kreinin (50). Two basic approaches have been followed in the studies that attempt to evaluate numerically the ex post effects of integration: one making use of import and export shares and the other utilizing income elasticities of import demand. Both methods are an attempt to provide a measure of the effects of integration as a difference between the actual value of trade, at some point after the establishment of the union, and a hypothetical value representing what it would have been if integration had not occurred. The major difficulties involved include not only the satisfactory construction of the hypothetical estimates, but also the separation between static and dynamic effects and between creation and diversion effects. In general, this hypothetical state has been specified by projecting into the future of some pre-integration trends in trade variables, under the assumption that these trends would have continued into the future at the absence of the customs unions.

The analysis of market shares consists of studying developments in shares of imports and exports in an attempt to construct the hypothetical estimates. The most successful attempts in this context have been the analyses of Duquesne de la Vinelle (20,21), Truman (88), Major and Hays (55), EFTA Secretariat (23), Williamson and Bottrill (102) and more recently Kreinin (50). Some of these studies have been limited to examine only development in shares among trade variables, but originally (87,52,54, 20) they did not allow for a distinction between the creation and diversion of trade. More recently (102), a more successful study,

distinguishes between trade creation by building a hypothetical world trade matrix under alternative assumptions about the relative importance of creation and diversion obtained from previous studies. Other studies (88,55,50) have utilized changes in the shares of imports from partners and nonmembers in total apparent consumption (defined as domestic production minus exports plus total imports) under the assumption that in the absence of integration the shares of the EEC in third country markets would have remained unchanged from their pre-union level.

As an example of a market shares methodology we will present a brief summary of the procedure employed by Truman (88). His analysis consists of the calculation of three basic shares of apparent consumption of manufacturers: domestic (DS), partners' (PS) and non-members' share (WS). If P is defined as gross domestic production, X as exports, M^T as total imports, M^P as imports from intra-union partners and M^W as imports from non-members, the following identities are assumed:

$$(1) \quad D^d = P - X, \text{ demand satisfied out of domestic production}$$

$$(2) \quad C = P - X + M^T, \text{ apparent consumption}$$

$$(3) \quad DS = \frac{D^d}{C}, \text{ domestic share}$$

$$(4) \quad PS = \frac{M^P}{C}, \text{ partners' share}$$

$$(5) \quad WS = \frac{M^W}{C}, \text{ nonmembers' share.}$$

At any point in time the shares sum to one and the changes in shares over a period of time sum to zero. The possible combinations of share changes from the establishment of a customs union are presented in Table IV.3. The basic assumption in this study is that in the absence of integration

Table IV.3. Patterns of share changes in the Truman methodology^a

Interpretation	Sign of the Share-Change		
	Change in DS	Change in PS	Change in WS
1. Double Trade Creation	-	+	+
2. Internal Trade Creation and External Trade Diversion	-	+	-
3. External Trade Creation and Internal Trade Diversion	-	-	+
4. Double Trade Erosion	+	-	-
5. Internal Trade Erosion and Internal Trade Diversion	+	-	+
6. External Trade Erosion and External Trade Diversion	+	+	-

^aSource: (88, p. 206).

the shares DS, PS and WS would have remained constant. Truman's model has been questioned by Williamson and Bottrill (102) especially for the above-mentioned assumption, which seems to be at variance not only with the widely held belief that income elasticities of import demand are in general greater than unity but also with the late fifties and early sixties' moves towards trade liberalization in Europe.

The import elasticities approach is an attempt to arrive at the "hypothetical" estimate by relating trade flows to income and price variables and making the basic assumption that the resulting parameters would have remained stable in the absence of integration. This method was first proposed and utilized by Waelbroeck (100) and Balassa (4) and subsequently developed by Clavaux (14) and Kreinin (49). The elasticities approach is based on the more theoretical formulation (86,73,74) of a way to extrapolate a base-year world trade matrix by explaining country i's exports to country j as:

$$X_{ij} = c \frac{Y_i^d Y_j^b}{r_{ij}^d} \quad (1)$$

where Y_i and Y_j are the national incomes of country i and j respectively, r_{ij} is the distance between i and j and a, b, c and d are constants.

The study of Balassa (4) consists of a comparison of ex post income elasticities of demand for imports for a pre-EEC (1953-59) and a post-EEC period (1959-65). Assuming that, in the absence of integration the elasticities would have remained unchanged, it follows that a fall in the income elasticity of demand for extra-EEC imports reveals "trade

diversion," an increase in the income elasticity of demand for imports from all sources of supply indicates "trade creation," while a rise in the elasticity of demand for intra-area imports indicates "gross trade creation." Clavaux (14) has argued that Balassa's estimates were biased downwards because in the early 1950's intra-European trade was extensively liberalized but there is no reason to believe that this trend would have continued into the 1960's. Kreinin (49) in the context of the Balassa framework has estimated import demand functions for each EEC member for 1953-61 and has utilized his estimated functions to predict hypothetical imports in the absence of integration for the years 1962-65, under the assumption of no dynamic effects of integration. Even though his income elasticity coefficients had the right sign and were significant, price elasticities were usually insignificant and of the wrong sign. His results, as compared to other studies, indicate extremely low effects of integration and his methodology has been criticized by Williamson and Bottrill (102) for the choice of both the year 1961 as the demarcation of pre- versus post-EEC estimates and of his price variable, as the ratio of the import price index to the domestic wholesale price index, with no reference to tariff changes.

Table IV.4 summarizes the quantitative estimates of integration effects derived from the above-mentioned studies.

Table IV.4. Empirical investigations of integration effects^a

Author	Method Used	Year	Trade Block Studied
Lamfalussy (52)	shares	1962	EEC
Waelbroeck (100)	elasticity 1,11	1962	EEC
Duquesne de la Vinelle (20,21)	shares	1962 1964	EEC
Truman (88)	shares: aggregated 1958 base aggregated 1960 base disaggregated 1958 base disaggregated 1960 base	1964	EEC
Balassa (4)	elasticities	1965	EEC
Kreinín (49)	elasticities	1965	EEC
Clavaux (14)	elasticities	1966	EEC
Major & Hays (55)	Updating of Truman (88) aggregated 1958 base aggregated 1960 base	1968	EEC
Williamson and Bottrill (102)	shares	1969 1969	EEC EFTA
Kreinín (50)	shares	1967-68 1969-70	EEC EEC
EFTA secretariat (23)	shares	1965	EFTA

^aSource: Adopted from (50).

^bNote: "External Trade Creation" indicates a rise, due to integration, of extra-Union imports.

Trade Creation (\$ Billions)	Trade Diversion (\$ Billions)	External Trade Creation ^b (\$ Billions)
	0.54	
1.01	0.49	
2.25		
4.00	1.5	
4.93	0	1.73
2.93	0	0.13
4.54	0.18	1.76
2.60	0.63	0.97
1.90	1.13	1.06
.04	0.08	
5.00		
10.77	0	2.89
7.96	0	0.85
6.4 - 8.3	1.9 - 3.5	
0.7 - 1.3	0.9 - 1.6	
4.3	1.8	
8.9	1.9	
0.37	0.46	

C. Some Previous Studies of the Effects of the CAP on EEC Agricultural Trade

Several studies have appeared in the literature that have provided a measure of the effect of the CAP on production, consumption and trade of agricultural products in the EEC. These studies have been either of the exante or the expost type. The exante studies have attempted to arrive at a measure of the CAP effects for some future date (1970 or 1975), based on projections of past trends under alternative assumptions about the agricultural policy framework in the EEC. The expost analyses have relied on actual data over the period of the implementation of the CAP to provide a preliminary assessment of the effects of EEC agricultural protection. We will limit our brief survey to only those earlier attempts that have utilized a more analytical framework.

Table IV.5 provides a summary of some of the major empirical studies that have attempted to evaluate the effects of the CAP on Community agriculture. Along with the year for which each study applies, the table indicates the type of methodology used, the commodity group studied and a concise summary of the major conclusions reached.

The most important exante studies have utilized various projection techniques from multiple regression analysis (48), to spatial price equilibrium models (17), linear programming model (29,30), the use of simple trend equations (24,25,57,72,80,82) and the estimation of an agricultural submodel for the EEC (47). The study by Fox (29,30) estimates the cost of CAP protection (negative production effect)² for wheat,

²The "Negative production effect" is defined as an increase in the total value of production by EEC countries minus the cost of providing the increased quantity with non-EEC imports.

Table IV.5. Empirical studies of the effects of the CAP on EEC agriculture

Author	Year	Method Used	Commodities Studied	Major Conclusions
Dean and Collins (17)	1970	projection by spatial equilibrium models	winter oranges	Gains by 1970 to EEC (in \$ millions): <u>to producers: 52.07, to consumers: 27.28, Net Gain: 43.3</u>
Fox (29,30)	1970	projection by linear progr. model	wheat, barley, maize	(in \$ millions) <u>Trade creation</u> by 1970: 74.08-145.8, <u>Trade diversion</u> : 5.65.9-782.8, <u>net effect</u> : -420.1 to -708.8, <u>negative production effect</u> : 261.8-369.8
Krause (48)	1963/64 1970	projection by multiple regressions	total agricultural production	<u>Trade diversion</u> by 1964: \$300 million per year. <u>Trade diversion</u> by 1970: \$500 million per year.
Malmgren and Schlechty (56)	1968	convert the effect of the CAP (variable levy) into ad valorem tariff equivalents	various agricultural products	The post-CAP protection level is about triple the pre-CAP level

Table IV.5. (Continued)

Author	Year	Method Used	Commodities Studied	Major Conclusions
Kruer and Berntson (51)	1967/69	estimate of excess expenditures on food by EEC consumers due to the CAP	various agricultural products	Cost of the CAP (variable levy) to consumers: \$14.4 billion. Divided as: \$5.5 billion from national agricultural budgets, \$2.4 billion in FEOPA expenditures and \$6.4 billion as excess consumer costs
EPP (24,25)	1970-75	regional price projections in EEC	wheat, barley, beef, milk, hogs, broilers	The projected price changes will favor farmers with the highest incomes. The operation of FEOPA causes a transfer of foreign exchange from member countries with agricultural net import balances to member countries with agricultural net export balances
Herinckx-Pirlot (34)	1968-69	estimation of the cost of the CAP to Belgian Consumers (variable levy)	total agric. production	Cost of the CAP to Belgian consumers: \$380 million, of which 21% derives from crops, 70% from livestock products and 9% from fruits and vegetables

Table IV.5. (Continued)

Author	Year	Method Used	Commodities Studied	Major Conclusions
Krause (47)	1965 1970	estimation of agric. submodel of EEC	total agric. production	<p>(percent per year) <u>by 1965</u> <u>by 1970</u></p> <p>Change in agric. prices..... 1.0 0</p> <p>Change in agric. output 2.0-2.5 1.0-1.5</p> <p>Change in agric. labor force -1.2 -(2.0-2.5)</p> <p>Change in per capita agric. income 3.7-4.2 2.7-3.7</p>
Sorenson and Hathaway (82)	1970 1975	projection of output, consumption and trade in EEC	grain and livestock products	<p><u>By 1975:</u> an increasing shortage of beef and an increasing surplus of milk will develop; approximate self-sufficiency for pork, eggs and poultry meat; increasing wheat surplus and some shift from wheat to barley.</p>
Petit and Viallon (72)	1970 1975	projection of output compared with demand projections in France	grain and livestock products	<p><u>Net Exports</u> (thousand metric tons) <u>1970</u> <u>1975</u></p> <p>Feed grains -1,002 - 250</p> <p>Food grains 8,630 10,177</p> <p>Dairy products 1,315 9,622</p> <p>Meat 182 196</p> <p>Eggs 16 -6</p>

Table IV.5. (Continued)

Author	Year	Method Used	Commodities Studied	Major Conclusions																												
Rossmiller (80)	1970 1975	projection of output compared with demand projections in Germany	grain and livestock products	Percent self-sufficiency: All grains Beef-veal Pork Poultry Eggs Milk																												
				<table><tr><td></td><td>1965</td><td>1970</td><td>1975</td></tr><tr><td></td><td>68%</td><td>72%</td><td>72%</td></tr><tr><td></td><td>79%</td><td>88%</td><td>82%</td></tr><tr><td></td><td>92%</td><td>100%</td><td>103%</td></tr><tr><td></td><td>42%</td><td>60%</td><td>75%</td></tr><tr><td></td><td>80%</td><td>88%</td><td>90%</td></tr><tr><td></td><td>111%</td><td>105%</td><td>111%</td></tr></table>		1965	1970	1975		68%	72%	72%		79%	88%	82%		92%	100%	103%		42%	60%	75%		80%	88%	90%		111%	105%	111%
	1965	1970	1975																													
	68%	72%	72%																													
	79%	88%	82%																													
	92%	100%	103%																													
	42%	60%	75%																													
	80%	88%	90%																													
	111%	105%	111%																													
Mangum (57)	1970 1975	projection of output compared with demand projections in Italy	grain and livestock products	Percent self-sufficiency: Feed grains Food grains Milk Eggs Meat																												
				<table><tr><td></td><td>1965</td><td>1970</td><td>1975</td></tr><tr><td></td><td>48.9%</td><td>41.5%</td><td>37%</td></tr><tr><td></td><td>99.8%</td><td>103.3%</td><td>113.4%</td></tr><tr><td></td><td>99.8%</td><td>97.5%</td><td>103.3%</td></tr><tr><td></td><td>89.0%</td><td>80.6%</td><td>85.7%</td></tr><tr><td></td><td>82.2%</td><td>71.0%</td><td>66.9%</td></tr></table>		1965	1970	1975		48.9%	41.5%	37%		99.8%	103.3%	113.4%		99.8%	97.5%	103.3%		89.0%	80.6%	85.7%		82.2%	71.0%	66.9%				
	1965	1970	1975																													
	48.9%	41.5%	37%																													
	99.8%	103.3%	113.4%																													
	99.8%	97.5%	103.3%																													
	89.0%	80.6%	85.7%																													
	82.2%	71.0%	66.9%																													
EEC (22) (Directory-General for Agricultures)	1967	Comparison of CAP with U.S. agricultural support system. Use of dynamic econometric model for U.S.	total agricultural production	The incidence of support on farm income is 50.4% in the EEC and 44.3% in the U.S. Withdrawal of support would lead to a fall of 19% in the value of crop production in the EEC and 28% in the U.S. and the value of livestock production by 38% in the EEC and 13% in the U.S.																												

barley and maize by 1970 between 261.8 and 369.8 million dollars.

The most systematic attempt to provide projections for grain and livestock products for the EEC in 1970 and 1975 was made by a research team from Michigan State University (24,82,72,57,80). A concise summary of the major results from the above studies is presented in Table IV.3. The general conclusion of the ex ante studies is the expectation that the CAP will lead to significant trade diversion from low cost world sources to high cost community sources of imports, and to a higher degree of self-sufficiency for the most agricultural commodities.

The number of ex post studies of the effects of the CAP has been relatively small. The more analytical among these studies have been the article by Herineckx-Pirlot (34), that attempted to estimate the cost of the CAP to Belgian consumers, the article by Kruer and Berntson (51), who estimated the overall cost of the CAP to EEC consumers for 1968-69, and more recently a book by Knox (46), that provides a more comprehensive evaluation of the effects of the CAP on trade and production in the EEC.

Berntson and Kruer computed the excess consumer costs for major agricultural commodities as the difference between the Community prices and the world price. This method assumes that the domestic prices that would prevail in the absence of any CAP arrangements would be equal to the existing world prices, without taking into consideration either that pre-CAP national support programs, or the possible downward effect of CAP on world prices. Excess consumer expenditure is defined as the product between domestic production minus exports and the EEC producer price minus the world price. It is estimated that, in addition to the expenditures

of financing the variable levy system, the CAP adds about \$6 to 7 billion to EEC consumers' food costs. This would correspond to about \$116 per family in 1968-69, which is more than 10% of the average family food budget in the community. These added costs would correspond to about 6% of the price of pork, 10% of the beef price and 12.5% of the bread price.

The study by Knox, without an explicit analytical framework, attempts to evaluate the effects of the CAP on world agriculture. The conclusion is reached that the trade diversion effect of the CAP has been considerable for all agricultural commodities (except fruit and vegetables and feed-stuffs other than cereals) an effect that was counterbalanced by the rapid increase in consumption of several commodities (particularly cereals) within the EEC.

D. The Methodology Used in the Present Study

In an attempt to capture the static effects of the CAP on trade of temperate zone products we have estimated import demand functions for the EEC for fourteen agricultural commodity groups³ and for all products lumped together, for animals and animal products and for all cereals and preparations. The approach of demand equations based on multiple regression was first proposed by Balassa (4) and Kreinin (49) under the assumption that income elasticities of import demand, in the absence of integration, would have remained unchanged. Elasticities are estimated for periods preceding and following the formation of the EEC. A fall in

³The correspondence between the SITC number and our commodity breakdown is summarized in Table 1 in the Appendix to this chapter.

the income elasticity of demand for extra-EEC imports indicates "trade diversion," while an increase in the income elasticity of demand for imports from all sources of supply provides an estimate of "trade creation." A rise in the income elasticity of demand for intra-EEC imports is an indication of "gross trade creation" and, finally, a rise in the elasticity of import demand for extra-EEC imports denotes "external trade creation."

The model utilized consists of three equations of import demand for the EEC: an equation for total imports of a given commodity into the EEC (M), an equation for imports into the EEC from extra-EEC sources (M_{ex}) and an equation for imports into the EEC from member countries (M_{int}). The general form of the equation of import demand used is:

$$M_t^i = f(Y_t, P_{eec\ t}^i / P_{w\ t}^i, \Delta ST_{t-1}^i) \quad (4.1)$$

where

M_t^i = the value of EEC imports of commodity i in year t ,

Y_t = the income of the EEC in year t ,

$P_{eec\ t}^i$ = average producer (or wholesale) price of good i in the EEC in year t ,

$P_{w\ t}^i$ = average world price of commodity i in year t ,

ΔST_{t-1}^i = change in stocks of good i during the previous year in the EEC.

The income variable included in the import equations was alternatively, the EEC Gross National Product at market prices (Y), real GNP at 1963 market prices (Y_r) or GNP per capita (Y_{pc}) all expressed in U.S. dollars. For wheat and barley an additional price variable was included in the import equation: P_{bt}/P_{wt} which is the ratio of the price of barley relative to the price of wheat in the EEC in year t . Some degree of substitutability between wheat and barley is assumed here.

The price variable P_{eec}/P_w is the ratio between the prices paid to domestic producers and the prices prevailing in the world market. As we discussed in Chapter II, this variable should capture the "margin of protection" attributed to the CAP. Because of the "non-tariff barrier" nature of the Variable Levy system of agricultural protection, ad valorem import tariff rates were not included in the specification of our price variable. An approximation of the "CAP margin of protection" is the difference between the prices domestic producers actually receive and those which they would have received if competing foreign products were freely imported. As an approximation, assuming that imports can replace domestic supplies without a significant rise in production costs, this latter price can be substituted by the price of exports in the world market.

The import demand equations were estimated for two time periods: 1953-1961 and 1961-1969 with the understanding that the first is the pre-EEC period and the second the post-EEC period under the assumption that significant discrimination in EEC agricultural trade began around the year 1961. The estimated equations were utilized in obtaining projections

for the 1964-1969 period in an attempt to provide a quantitative estimate of the magnitude of trade creation and diversion.

Two forms of Equation (4.1) were estimated by a multiple regression. First a linear form:

$$M_t^i = a_0 + a_1 Y_t + a_2 P_{eec}^i / P_w^i + a_3 \Delta ST_t^i - 1 \quad (4.2)$$

and second in log-linear form:

$$\ln M_t^i = \ln a_0 + b_1 \ln Y_t + b_2 \ln P_{eec}^i / P_w^i + b_3 \ln \Delta ST_t^i - 1 \quad (4.3)$$

which is obtained by making a double logarithmic transformation on the multiplicative function:

$$M_t^i = a_0 Y_t^{b_1} (P_{eec}^i / P_w^i)^{b_2} (\Delta ST_t^i - 1)^{b_3} \quad (4.4)$$

This latter form of the import equation was selected because it yields parameters in the form of elasticities. For example:

$$b_1 = \frac{\ln M_t^i}{\ln Y_t} = \frac{dM_t^i}{dY_t} \cdot \frac{Y_t}{M_t^i} \quad (4.5)$$

can be interpreted as the income elasticity of import demand. If b_1^1 is the income elasticity before integration and b_1^2 is the income elasticity after integration then the possible cases can be summarized as follows:

in the case of total EEC imports:

$$b_1^1 < b_1^2, \text{ denotes trade creation,}$$

in the case of intra-EEC imports:

$$b_1^1 < b_1^2, \text{ denotes gross trade creation,}$$

in the case of extra-EEC imports:

$$b_1^1 > b_1^2, \text{ indicates trade diversion,}$$

and, finally, in extra-EEC imports:

$$b_1^1 < b_1^2, \text{ indicates external trade creation.}$$

E. The Statistical Results

The model presented in the previous section was estimated on the basis of annual observations covering the 1953-1969 period. The estimated equations are presented in Appendix A at the end of this study. No serial correlation, as reflected by the Durbin-Watson (D.W.) statistic, has been found. The coefficient of determination adjusted for degrees of freedom (\bar{R}^2) and the Durbin-Watson statistic are given for each estimated equation, while the t values of each estimated coefficient is presented in parentheses below it.

An examination of the estimated double logarithmic equations relatively high coefficients of determination (given the low number of degrees of freedom) with about 45% of the estimated equations having an \bar{R}^2 above .90, 18% between .80 and .90, 7% between .70 and .80 and only

4% with an \bar{R}^2 below .40. The least successful equations in terms of the adjusted coefficient of determination appear to be the equations for dairy products and other cereals and forest products (probably because of irregular trends due to aggregation) and for rice and barley (whose trade has fluctuated widely over the period under consideration).

In terms of the significance of the individual estimated coefficients the results appear less favorable. While the income coefficients were significant in about all equations a smaller number of price coefficients were found to be significant. More specifically, about 60% of the income coefficients were significant at the 1 percent level, 12% at the 5% level and about 12% at the 10% level. Only 6% of the price coefficients were significant at the 1 percent level, 3% at the 5% level and 13% at the 10 percent level. What is perhaps worth noticing is the fact that the significant price coefficients were exclusively limited to the commodities subject to the variable-levy system of protection.

In addition to the estimation of the double logarithmic equations we estimated our import functions in linear form. The results of our linear equations are very similar to those of the logarithmic equations. In terms of the coefficient of determination (adjusted for degrees of freedom) 47% of the estimated equations have an \bar{R}^2 greater than .90, 17% between .80 and .90 and 7% between .70 and .80. In examining the significance of the individual estimated coefficients, the income coefficients were significant in almost all equations while less favorable results were obtained for the price coefficients. About 63% of the income coefficients were significant at the 1 percent level, 6% at the 5 percent

level and 13% at the 10 percent level. About 7% of the price coefficients were significant at the 1 percent level, 4% at the 5 percent level and 9% at the 10 percent level.

Table IV.6 provides a summary of the estimated ex-post income elasticities of import demand of the Common Market with an indication of possible trade creation (TC), trade diversion (TD), external trade creation (ETD) and gross trade creation (GTC).

Evidence of trade creation was found for all cereals (and in particular for wheat, rice and maize), for dairy products and food-stuffs. Trade creation in food-stuffs can be explained by a rapidly-growing demand within the EEC for meat, while trade creation in dairy products was probably related to a significant increase of the domestic demand for milk and milk products.

Trade creation in maize is primarily related to demand rising faster than output of this commodity and in the case of rice, creation of trade was associated with production dropping much faster than the decline in consumption. In the case of wheat the result is more difficult to reconcile with an absolute decline in imports in physical units.

Trade diversion has characterized all commodities studied, with the exception of dairy products, maize and feed-stuffs which experienced external trade creation over our sample period. The evidence thus would indicate that the formation of the common agricultural policy has considerably affected the pattern of international trade flows by shifting from foreign producers to partner-country sources of supply for eleven out of the fourteen individual commodity groups studied. This conclusion

Table IV.6. Ex-post income elasticities of import demand in the EEC

Commodities	Total Imports			Extra - EEC Imports			Intra-EEC Imports		
	(a)	(b)	(b-a) ^a	(a)	(b)	(b-a)	(a)	(b)	(b-a)
1. Animals and Animal Products (SITC: 001,01,02,03)	1.70	1.22	-0.48	1.69	1.20	-0.49TD	2.83	3.18	+0.35GTC
2. All cereals (SITC: 04)	0.74	0.82	+0.08TC ^b	0.74	-0.50	-1.24TD	4.07	2.54	-1.53
3. All temperate zone products	1.15	0.87	-0.28	1.02	0.50	0.52TD	2.79	3.60	+0.81GTC

^a(a) refers to period 1953-1961, (b) to 1961-1969 and (b-a) is the difference between (1961-1969) - (1953-1961).

^bTC = Trade Creation

TD = Trade Diversion

ETD = External Trade Creation (Negative Trade Diversion)

GTC = Gross Trade Creation.

Table IV.6. (Continued)

Commodities	Total Imports			Extra-EEC Imports			Intra-EEC Imports		
	(a)	(b)	(b-a)	(a)	(b)	(b-a)	(a)	(b)	(b-a)
1. Live Animals	2.21	1.51	-0.70	2.01	1.32	-0.69TD	6.37	4.30	-2.07
2. Meat	2.47	1.25	-1.22	2.40	1.35	-1.05TD	2.60	2.40	-0.20
3. Dairy Products	1.05	1.60	+0.55TC	0.58	1.66	+1.08ETC	1.61	1.78	+0.17GTC
4. Eggs	1.14	-1.13	-2.27	1.39	-2.73	-4.12TD	0.94	-0.41	-1.35
5. Fish	1.46	1.01	-0.45	1.37	0.79	-0.58TD	3.70	3.04	-0.66
6. Wheat	-0.63	3.02	+3.65TC	-0.95	-1.09	-0.14TD	3.57	5.33	+1.76GTC
7. Rice	-0.04	0.18	+0.14TC	1.71	0.31	-1.40TD	-4.24	-0.38	+3.86GTC
8. Barley	1.33	0.81	-0.52	-0.77	-2.09	-1.32TD	13.84	3.95	-9.89
9. Maize	1.24	1.72	+0.48TC	1.04	1.52	+0.48ETC	8.25	10.17	+1.92GTC
10. Other Cereals	1.46	0.58	-0.88	-0.68	-0.99	-1.67TD	2.48	-0.09	-2.57
11. Fruits & Vegetables	1.32	0.76	-0.56	1.22	0.63	-0.59TD	1.54	0.99	-0.55
12. Feed-Staffs	1.48	1.62	+0.14TC	1.54	1.62	+0.08ETC	2.62	2.84	+0.22GTC
13. Hides & Skins	0.99	0.54	-0.45	0.91	0.51	-0.40TD	2.25	1.52	-0.73
14. Wood, Cork, Pulp	2.40	1.40	-1.00	2.27	1.44	-0.83TD	4.49	0.91	-3.58

is in accordance with both the theoretical effects of the CAP and the existing empirical evidence.

On the basis of our estimated equations we have projected for 1969 the value of total imports, the imports from non-EEC sources and intra-EEC imports for each commodity group under two hypothetical situations. The first hypothesis we will call the pre-CAP conditions. This implies a continuation of the pre-CAP individual agricultural policies, expressed as an increase of domestic prices in the 1961-69 period as in the previous period. The second hypothetical situation corresponds to a free-trade ideal where domestic prices in the EEC equal world prices. Since it is difficult to imagine what world prices would have been at the absence of the CAP, we assume that the existing world prices would prevail even under free trade conditions for agricultural products. Table IV.7 presents the estimates of EEC imports under the above two hypotheses and Table IV.8 provides an estimate of the distortion in international trade caused by the substitution of the CAP to the previous individual agricultural support systems and the distortion involved from the adoption of protectionist policies as compared to a free trade situation.

If h superscript denotes the estimated hypothetical import figure and no superscript indicates the actual value, then by letting

$$k_1 = M_{\text{intra}} - M_{\text{intra}}^h$$

$$k_2 = M_{\text{extra}} - M_{\text{extra}}^h$$

$$\text{and } k_3 = M_{\text{tot}} - M_{\text{tot}}^h$$

we can make use of the classification of the possible effects of

Table IV.7. Actual and hypothetical EEC imports of temperate zone products in 1969 (million U.S. dollars)

Commodities	Actual Imports			Hypothetical Imports					
	Total	Intra	Extra	A) No Cap			B) Free Trade		
				Total	Intra	Extra	Total	Intra	Extra
1. Live Animals	707.9	324.8	383.1	713.3	149.0	564.3	758.7	201.5	557.2
2. Meat	1430.1	801.5	628.6	1123.7	409.4	714.3	1128.6	410.5	718.1
3. Dairy Prod.	654.2	563.0	91.2	464.3	223.3	241.0	663.6	329.0	334.6
4. Eggs	118.3	99.2	19.1	284.7	59.9	224.8	296.4	60.9	235.5
5. Wheat	599.3	314.5	284.8	288.0	82.3	205.7	956.3	338.9	617.4
6. Rice	69.6	18.5	51.1	39.1	0.0	39.1	44.9	3.8	41.1
7. Barley	247.0	195.1	51.9	241.1	126.5	114.6	266.3	184.0	82.3
8. Maize	638.5	133.0	505.5	548.2	70.4	477.8	760.8	112.7	648.2
9. Other Cereals	251.8	167.2	84.6	357.4	161.9	195.5	326.5	56.7	269.8
10. Total Variable-Levy Goods	4716.7	2616.8	2099.9	4059.8	1282.7	2777.1	5202.1	1698.0	3503.1
11. Fish	474.3	133.0	341.3	511.2	130.4	380.8	527.0	129.7	397.3
12. Fruits & Veg.	2342.0	972.9	1369.1	3037.0	1143.6	1893.4	2937.4	1057.1	1880.3
13. Feed-Stuffs	947.3	217.9	729.4	985.7	221.2	764.5	984.8	223.4	761.4
14. Hides, skins, furs	618.3	98.4	519.9	875.8	156.1	719.7	776.6	135.2	641.4
15. Wood, cork, pulp	2117.5	165.4	1952.1	2485.1	254.7	2230.4	2522.7	281.2	2241.5
16. Total Non-Variable Levy Goods	6499.4	1587.6	4911.8	7894.8	1906.0	5988.8	7748.5	1826.6	5921.9

Table IV.8. Estimates of trade creation and diversion in the EEC during 1969: the static effect of the EEC (million U.S. dollars)^a

Commodities	As compared to pre-CAP policies				As compared to Free Trade			
	k_3	k_1	k_2		k_3	k_1	k_2	
1. Live Animals	-5.4	175.8	-181.2	TD	-50.8	123.3	-174.1	TD
2. Meat	306.4	392.1	-85.7	TC&TD	301.5	391.0	-89.5	TC&TD
3. Dairy Products	189.9	339.7	-149.8	TC&TD	-9.4	234.0	-243.4	TD
4. Eggs	-166.4	39.3	-205.7	TD	-178.1	38.3	-216.4	TD
5. Wheat	311.3	232.2	79.1	NE	-357.0	-24.4	-332.6	TD
6. Rice	30.5	18.5	12.0	TD	24.7	14.7	10.0	TD
7. Barley	5.9	68.6	-62.7	TC&TD	-19.3	11.1	-30.4	TD
8. Maize	90.3	62.6	27.7	TD	-122.3	20.3	-142.7	TD
9. Other Cereals	-105.6	5.3	-110.9	TD	-74.7	110.5	-185.2	TD
10. Total Variable Levy Goods	656.9	1334.1	-677.2	TC&TD	-485.4	918.8	-1403.2	TD
11. Fish	-36.9	2.6	-39.5	TD	-52.7	3.3	-56.0	TD
12. Fruits & Veg.	-695.0	-170.7	-524.3	TD	-595.4	-84.2	-511.2	TD
13. Feed-Stuffs	-38.4	-3.3	-35.1	TD	-37.4	-5.5	-32.0	TD
14. Hides, Skins, Furs	-257.5	-57.7	-199.8	NE	-158.3	-36.8	-121.5	NE
15. Wood, Cork, Pulp	-367.6	-89.3	-278.3	NE	-405.2	-115.8	-289.4	NE
16. Total Non-Variable Levy Goods	-1395.4	-318.4	-1077.0	TD	-1249.1	-239.0	-1010.1	TD

^aNote that $k_1 = M_{\text{intra}} - M_{\text{intra}}^h$, $k_2 = M_{\text{extra}} - M_{\text{extra}}^h$, $k_3 = M_{\text{tot}} - M_{\text{tot}}^h$.

Integration proposed in the EFTA Secretariat 20, p. 15 study, summarized in Table IV.9. Our findings are presented in Table IV.8, where TC denotes trade creation, TD indicates trade diversion and NE shows no integration effect.

We can observe from our estimates that a comparison of the actual import figures with the value of imports that would have prevailed if pre-CAP agricultural policies had continued up to 1969 shows trade diversion for both variable levy commodities and for those temperate zone goods not covered by the CAP. In particular, the formation of the Common Market has been found to have had no significant effect on imports of wheat, hides, skins and furs, and forest products (wood, cork and pulp). With respect to hides, furskins and forest products these results reflect a low degree of protection that has not been significantly affected by the formation of the EEC since no preferential treatment was reserved for member countries. Under free trade conditions imports of these two commodity groups are not expected to have been much different than the actual trade flows. In the case of wheat the result is more difficult to explain. Wide year to year variations in imports of wheat make the choice of 1969 as the projection year quite arbitrary. Furthermore, the EEC was a net importer of wheat, while after the introduction of the CAP, as a result of increased production, the Community has become a net exporter. This latter trend might lead to underestimation of the trade diverting effects of the CAP if only developments in EEC imports are analyzed. Finally, no distinction was possible between hard and soft wheat and thus our results do not take into account the fact that the degree of

Table IV.9. Classification of the possible effects of integration proposed in the EFTA Secretariat Study (23)

Values of k:				Interpretation	
k_3	k_1	k_2			
1.	$k > 0$	> 0	> 0	(a) $k_1/M_{intra} > k_2/M_{extra}$ (b) $k_1/M_{intra} < k_2/M_{extra}$	Trade Creation No effect
2.	> 0	> 0	≥ 0	(a) $k_2 = 0$ (b) $k_2 < 0$	Trade Creation Trade Creation and Trade Diversion
3.	> 0	≤ 0	> 0		No effect
4.	< 0	< 0	≤ 0	(a) $k_1/M_{intra} < k_2/M_{extra}$ (b) $k_1/M_{intra} > k_2/M_{extra}$	Trade Diversion No effect
5.	< 0	≥ 0	< 0		Trade Diversion
6.	< 0	≤ 0	> 0		No effect
7.	$= 0$	> 0	< 0		Trade Diversion
8.	$= 0$	< 0	> 0		No effect
9.	$= 0$	$= 0$	$= 0$		No effect

self-sufficiency in soft wheat has increased considerably after the introduction of the CAP, while the Community has remained a net importer of hard wheat.

Evidence of trade creation and trade diversion was found for dairy products, meat and barley, which can be explained by the rapidly growing demand for these products. The remaining commodities indicated trade diversion as a result of the adoption of the CAP or the formation of the EEC Customs Union in the case of the non-variable levy goods. Total trade creation for all variable-levy products was estimated to be about 657 million U.S. dollars, three quarters of which was related to meat and dairy products. Trade diversion for all temperate zone products together was found to be approximately \$2073 million by 1969 in the EEC. A brief summary of our findings is presented below in Table IV.10:

Table IV.10. Trade diversion for all temperate zone products (in \$ millions)

	Trade Creation (1)	Internal Trade Diversion (2)	External Trade Diversion (3)	Total Trade Diversion (2) + (3)
Total variable- levy goods	656.9	--	677.2	677.2
Total non- variable levy goods	-1395.4	318.4	1077.0	1395.4
Total temperate zone products	-738.5	318.4	1754.2	2072.6

Trade diversion as a percentage of actual aggregate imports for variable-levy commodities was about 14.4% while a larger trade diverting effect (21.5%) was found for all non-variable-levy goods. In terms of the individual commodity groups, the largest trade diversion effect was felt in dairy products, eggs, live animals, barley, "other cereals" and fruits and vegetables.

Finally, external trade creation or an increase in extra-EEC imports following the adoption of the CAP was found to be around \$119 million by 1969 and this effect was felt in wheat, rice and maize.

V. THE EFFECTS OF THE CAP ON THE ALLOCATION
OF THE AGRICULTURAL LABOR FORCE IN THE EEC:
THE DYNAMIC EFFECTS OF THE CAP

The Common Agricultural Policy of the EEC by protecting the agricultural sector from foreign competitors and supporting farm prices and incomes, has affected the efficiency of sectoral resource allocation and, therefore, aggregate economic growth in the Common Market. We will attempt in this chapter to provide a quantitative estimate of the effect of the implementation of the CAP on labor mobility on the agricultural sector and income growth in the EEC.

We will start with a brief account of the characteristics of Common Market agriculture and some of the problems that relate to this sector. We will next study labor migration as a source of labor supply in the post-EEC period and the role of a heavily protective agricultural policy as a factor that reduces the mobility of labor from agriculture.

Finally, a very simple submodel of Common Market agriculture will be estimated and an attempt is made to reach some very tentative conclusions about the "dynamic" or resource allocation effects of the CAP on labor mobility and, consequently, on economic growth in the EEC.

A. Agriculture in the EEC

An examination of the position of agriculture in the economies of the Common Market countries and a comparison with some selected developed countries is presented in Table V.1. The general impression obtained from this table is one of relative inefficiency of Community agriculture

Table V.1. Economic characteristics of agriculture in selected countries

	Agricultural value added as a % of GDP ^a		Agricultural employment as a % of total employment ^b		Incremental capital/output ratio in Agriculture ^c	
	1961	1969	1961	1969	1961	1969
Belgium	7.5	5.3	8.3	5.2	1.1	1.5
France	8.5	6.0	22.4	15.1	1.0	5.9
Germany	5.2	3.6	13.1	9.6	-	-
Italy	15.4	11.3	31.1	21.5	1.2	1.6
Luxembourg	7.6	5.3	15.8	11.6	-	-
Netherlands	9.8	7.0	11.0	7.6	1.0	1.5
United Kingdom	3.9	3.1	4.0	2.9	4.3	4.9
Denmark	15.1	10.0	18.1	11.9	3.0	5.0
Ireland	24.3	19.7	36.3	28.4	2.6	1.3
Norway	10.4	6.5	20.7	14.7	4.4	5.5
United States	3.9	3.0	7.9	4.6	11.8	6.1
Canada	6.4	5.9	13.0	8.2	5.8	4.1
Sweden	7.2	4.9	14.4	8.8	1.6	4.1
Japan	14.0	8.7	29.0	18.8	1.8	5.6

^aThe source is (69)

^bThe sources are (63,66,70)

^cDefined as the ratio of gross fixed asset formation to increments in gross domestic agricultural product in current prices. Source: (69).

^dThe source is (66).

^eThe source is (68).

Ratio of prices re- ceived/paid by farmers ^d	Gross fixed asset forma- tion as a % of GDP in Agriculture ^e		Average farm size (hectares) ^e	Indices of gross fixed asset forma- tion in Agriculture in 1968 ^e
(1963 = 100)	1958	1968	1968	(1958 = 100)
0.93	11.9	13.1	11	150
0.99	14.3	17.4	24	210
0.92	19.6	25.8	10	171
0.98	13.9	15.8	7	176
-	-	-	20	-
1.06	8.3	15.6	16	265
-	14.3	18.4	68	147
-	10.2	15.7	20	194
1.08	10.9	14.8	16	179
1.00	25.7	28.7	13	140
1.00	17.8	22.4	212	150
0.99	23.2	36.1	207	212
0.96	15.9	21.9	17	201
-	11.3	18.2	1.1	309

(except in the Netherlands and Belgium), as compared to the agricultural sector of other industrial countries. A large number of people are still employed in EEC agriculture while their contribution to the Community's GDP is relatively smaller. In particular, Italy and France still employed by 1969 more than 15% of the total labor force in agricultural activities, which is in sharp contrast with the lower percentages for the United Kingdom and the United States. In terms of the contribution of agricultural value added to the nation's GDP, Italy, Denmark and Ireland have percentages higher than 10%, while the smallest relative contribution of this sector (about 3%), was found in Germany, Britain and the United States. The fact that the percentage of agricultural workers in total employment in France, Germany, Italy and Luxembourg, does not product a corresponding percentage of the GDP, can be considered as evidence of the disparity between average incomes in agriculture and those in the rest of the economy of the above countries.

Further evidence of the relative inefficiency of the agricultural sector of the Common Market countries can be inferred by the relatively lower incremental capital-output ratios (ICOR) in EEC agriculture. The incremental or marginal capital-output ratio in agriculture is defined as the ratio of gross fixed asset formation to increments of gross domestic agricultural product. One would expect that the ICOR tends to be lower in the countries where agriculture is relatively less developed, since capital remains a comparatively scarce factor and its productivity should be relatively high.

Furthermore, the average size of a farm in EEC countries is

considerably lower (between 7 and 24 hectares) than the farm size in Britain, Canada and the United States, an indication of the uneconomical size of the average farm in the Community. Finally, we observe a considerable rise in gross fixed asset formation in agriculture over time and of GFAF as a percent of agricultural GDP in all Common Market countries over the period under consideration. This reflects the increasingly capital-intensive nature of agricultural production in the EEC.

B. European Economic Integration and Labor Migration

An important source of labor supply in post-war Western Europe has been the immigration of workers from both European and non-European sources. This international transfer of labor has not always been smooth and unimpeded. In the sixties the integration of the national economies in the EEC has offered an opportunity for removing some of the social and economic obstacles to labor mobility and therefore to improve the efficiency of resource allocation within the community. The Treaty of Rome provided for the free movement of labor in Articles 48 and 49 which required that free movement be achieved before the end of the transition period.

The establishment of free labor movement was achieved gradually. The first attempt in the EEC towards intra-community movement of workers came from a decision of the Council in June, 1961, to implement the first regulations. These came into force in September, 1961. The regulations provided that any vacancies on the national labor market could be filled within three weeks by the domestic administration from its own nationals,

but that after this period offers of employment would be transmitted to the other member-countries. Workers accepting this offer and moving to another Community country would be able to renew their labor permits there for the same occupation after one year of regular employment; for any other occupation for which they were qualified, after four years. Automatic granting of labor permits would apply in the case of occupations for which there was a labor shortage, while workers specifically applied for by an employer would be granted a permit without reference to the domestic labor market, if supported by family reasons or the needs of the firm concerned.

During the second stage of the implementation of Articles 48 and 49 progressively more freedom of movement was achieved so that, after two years of regular employment a migrant worker could move to any job on the same terms as nationals. Finally, by July, 1968, complete freedom of movement became a reality.¹

The empirical effects of European economic integration on labor migration have been investigated by Yannopoulos (104), Hunter and Reid (34) and Bohning (10). Some of the trends in labor migration in the EEC are summarized in Tables V.2 and V.3. In Table V.2 we can observe net migration into EEC countries from 1950 to 1969. In the 1950-59 period Germany and France were the major recipients of migrant workers with Italy and to a lesser degree the Netherlands as the only countries

¹ In order to alleviate the sociological, psychological and political difficulties that accompany labor migration, the European Social Fund was established in the EEC which is concerned with resettlement and help finance vocational retraining in order to ensure the reemployment of workers who have to change their jobs.

Table V.2. Net migration in EEC countries^a (thousands)

Year	Belgium	Luxembourg	France	Germany	Italy	Netherlands
1950	-10	1.1	20	378	-77	20
1951	14	1.1	30	113	-99	-23
1952	12	1.0	19	48	143	-48
1953	0	0.9	19	348	-82	-32
1954	0	0.6	51	220	-103	-20
1955	15	0.6	120	308	-131	-5
1956	13	0.9	170	329	-137	-11
1957	30	0.7	220	379	-122	-12
1958	2	0.3	140	294	-125	12
1959	-7	0.4	130	176	-122	-17
Average 1950-59	6.9	0.76	91.9	259.3	-114.1	-13.6
1960	7	0.6	140	336	-93	-13
1961	-1	2.4	180	419	-141	6
1962	19	2.8	860	283	51	17
1963	35	1.6	215	224	164	8
1964	49	3.1	185	301	60	14
1965	31	1.8	110	344	-13	19
1966	21	0.7	125	132	-109	20
1967	18	-0.5	92	-177	-125	-12
1968	6	0.7	100	278	-130	6
1969	7	1.7	151	572	-57	20
Average 1960-69	19.2	1.49	215.8	271.2	-39.3	8.5

^aSources = (63,70).

Table V.3. Total immigration and intra-community movement of workers in the EEC^a in thousands

Year	Total EEC Immigration	Total Intra-EEC Migration	(b) as a % of (a)	Italian Con- tribution to Intra-EEC Total (c) Total of (c)	(c) as a % of (b)
	(a)	Total of (b)			
1958	236.7	152.1	64.3	123.2	81.0
-					
1961	575.1	292.5	50.9	233.2	79.7
1962	645.7	276.4	42.8	218.4	79.0
1963	657.8	226.8	34.5	170.8	75.3
1964	804.2	232.3	28.9	174.7	75.2
1965	893.1	304.9	34.1	245.2	80.4
1966	756.5	246.1	32.5	197.4	80.2
1967	412.9	116.6	28.2	82.5	70.8
1968	653.9	168.1	25.7	144.1	85.7
1969	997.4	174.8	17.5	150.5	86.1
1970	1085.9	211.3	19.5	179.9	85.1

^aSources: (10,33).

experience of net out-migration. During the following ten years it can be noticed that Belgium, Luxembourg and France² more than doubled (in average) their net immigration and the Netherlands has become a net recipient rather than a net contributor of migrant workers. Germany still continued to receive the largest number of immigrants and the Netherlands had a net inflow of migrants. Italy remained the only country with substantial labor surpluses during this period, contributing approximately 80 percent of intra-EEC migration.

Overall immigration in the EEC increased steadily until 1965, slowed down in 1966-67 and increased rapidly again in the 1968-70 period. According to Yannopoulos (104, p. 235) up to 1965 the EEC was characterized--with the exception of Italy--by low unemployment and considerable manpower shortages but from 1966 labor market conditions have begun to ease. As a result the contribution of intra-community workers to overall immigration has declined steadily from 64.3 percent in 1958 to 19.5 percent in 1970. As the intra-EEC labor movements declined, the labor inflows from third countries acquired more importance.

C. Agricultural Labor Mobility a Factor of EEC Growth

The rapid rate of expansion of EEC countries during the post-war period has been attributed, along with other factors, to the ready availability to industry of excess labor (18,19,45). Kindleberger (45, p. 3) concluded that

²Where about half consisted of seasonal immigration.

...the major factor shaping the remarkable economic growth which most of Europe has experienced since 1950 has been the availability of a large supply of labor. The labor has come from a high rate of material increase (the Netherlands), from transfers from agriculture to services and industry (Germany, France, Italy), from the immigration of refugees (Germany), and from the immigration of unemployed and underemployed workers from the Mediterranean countries (France, Germany, and Switzerland).

In the late fifties this source of economic growth appears to have diminished in importance because of a fall in unemployment and a tightening of the labor market. These pressures in the labor market have contributed to wage claims exceeding the rate of productivity growth, and have led to price inflation.

More specifically, the contribution of the transfer of the agricultural labor force to more productive activities in industry and services to European economic growth in the 1950-1962 period, was estimated by Denison (18,19). The estimated (19, pp. 201-202) contribution of this transfer to the 1950-1962 growth rate of national income per person employed was 0.29 percentage points in the United States, 0.35 percentage points in Belgium and 0.10 percentage points in the United Kingdom. The contribution to growth in the other EEC countries was found to be larger--0.88 points in France, 0.90 in Germany, 1.26 in Italy, and 0.47 in the Netherlands. The general assumption underlying Denison's calculation is that, if the farm percentage of total employment in 1950 had been as low as it was in 1962, there would still have been over-allocation of labor to agriculture relative to the rest of the economy.

The transfer of labor out of low productivity agriculture to high productivity nonagriculture jobs appears therefore to have been a

significant source of economic growth in the Fifties.

Approximately 10 million people were employed in the agricultural sector of the Community in 1969. This was 47.8 percent below the 19.4 million people employed in 1952 and about 30 percent below the 14.5 million employed in 1961. Table V.4 provides a picture of agricultural employment in EEC countries as a percentage of total civilian employment. The average annual rate of outmigration from agriculture has increased steadily from -2.9 percent in the 1954-57 period to -4.17 percent in the 1962-65 period, but this trend was reversed in the 1966-69 period to a rate of -4.0 percent. The steady movement of workers out of agriculture has been the principal source of new employment for industrial and service occupations, but another important source of labor supply in the EEC has been the immigration of workers from both European and non-European sources. Overall immigration in the EEC increased steadily until 1965, slowed down in 1966-67, and increased rapidly again in the 1968-70 period. According to Yannopoulos (104, p. 235) up to 1965 the Community was characterized--with the exception of Italy--by low unemployment and considerable manpower shortages but from 1966 labor market conditions have begun to ease. As a result, the contribution of intra-community workers to overall immigration has declined steadily from 64.3 percent in 1958 to 19.5 percent in 1970. As the intra-EEC labor movements declined, the labor inflows from third countries acquired greater importance.

By 1967-68 the EEC experienced a considerable rise in the productivity of farm labor (about 7-8 percent a year) as compared to the 1963-64 period (3-4 percent), brought about by the steady decline in the number

Table V.4. Agricultural employment as a percentage of total civilian employment^a

Year	Belgium- Luxembourg	France	Germany	Italy	Netherlands	EEC
1952	11.4	31.0	21.1	49.1	15.6	30.3
1953	11.3	29.6	19.9	45.6	15.1	28.7
1954	11.0	28.2	18.9	42.3	14.5	27.1
1955	10.5	27.0	17.7	40.7	13.9	25.9
1956	9.9	26.2	16.9	38.4	13.4	24.6
1957	9.5	25.2	16.3	36.3	13.0	23.6
1958	9.3	23.7	15.7	34.9	12.7	22.7
1959	9.3	23.2	14.9	34.3	12.2	22.1
1960	8.9	22.4	14.0	32.8	11.6	21.0
1961	8.5	21.6	13.1	31.0	11.0	19.9
1962	8.2	20.6	12.8	29.4	10.5	19.0
1963	7.7	19.5	12.2	27.2	9.9	17.8
1964	7.2	18.5	11.6	25.6	9.5	16.8
1965	6.6	17.8	11.1	26.1	8.9	16.4
1966	6.2	17.0	10.8	24.9	8.6	15.7
1967	6.0	16.4	10.6	24.1	8.4	15.3
1968	5.8	15.8	10.2	22.5	8.0	14.5
1969	5.4	15.1	9.6	21.5	7.6	13.8

^aSources: (63,70).

of persons employed in agriculture combined with a significant increase in total real farm output. Furthermore agricultural productivity has risen faster than labor productivity in other sectors of the economy. However, as can be seen from Table V.5, labor productivity in agriculture in EEC countries is still considerably lower than productivity in other sectors, especially in France and Germany.

In the face of these developments, the idea has been advanced in the literature (3,47,48,60) that the protectionist effect of the CAP on EEC agriculture has slowed down the movement of labor out of the agricultural sector. For example, according to Balassa (3, p. 181) in reference to the effects of the CAP:

....the ensuing substitution of high-cost continental sources of supply for low-cost non-European sources would lead to a decrease of productive efficiency and could be expected to interfere with economic growth in the Common Market countries inasmuch as the transfer of the labor force from agricultural to non-agricultural occupations would be slowed down.

This hypothesis implies that so long as labor productivity is higher in non-agricultural sectors of the economy, any policy, like the CAP arrangements, that would tend to support farm prices at high levels and thus slowing down the rate of out-migration of labor from agriculture, is bound to affect the efficiency of resource allocation and the aggregate growth rate of the economy.

Table V.5. Level of labor productivity ($\frac{X}{L}$) and gross capital formation per worker ($\frac{\Sigma I}{L}$), 1962-1969^a

Sector	Belgium		France		Germany		Netherlands	
	$\frac{X}{L}$	$\frac{\Sigma I}{L}$	$\frac{X}{L}$	$\frac{\Sigma I}{L}$	$\frac{X}{L}$	$\frac{\Sigma I}{L}$	$\frac{X}{L}$	$\frac{\Sigma I}{L}$
1. Whole Economy	3,179	3,377	3,831	3,566	3,075	3,063	2,461	3,261
2. Agriculture	3,190	1,995	1,720	1,385	1,250	1,440	2,410	1,280
3. Mining	2,543	3,170	4,520	6,350	3,641	4,818	3,266	--
4. Manufacturing	2,591	2,050	4,963	--	3,370	--	2,597	--
5. Construction	2,680	--	3,211	--	2,521	--	1,733	--
6. Electricity, Gas, & Water	7,231	23,020	7,260	39,840	8,261	22,181	5,075	--
7. Transport & Communication	3,099	--	4,635	--	3,468	--	1,725	--
8. Commerce	4,630	8,316	4,860	--	4,249	5,040	2,763	5,080
9. Services	1,200	--	1,320	--	1,232	--	890	--

^a Note: $\frac{X}{L}$ = sector output per worker in U.S. dollars and $\frac{\Sigma I}{L}$ = sectoral gross capital formation per worker in U.S. dollars. Source: (71).

D. A Methodology to Estimate the Effects of the CAP
on Labor Allocation and Income Growth in the EEC

To test some of the hypotheses presented in the previous section, a very simple submodel of the agricultural sector in the Common Market was estimated and an attempt was made to quantify the effect of the adoption of the CAP on labor allocation and consequently on aggregate economic growth in the European Economic Community. The structural model equations are summarized below:

$$(1) Y = V_A + V_{NA}$$

$$(2) E = E_A + E_{NA}$$

$$(3) V_A = \alpha_0 + \alpha_1 E_A, \quad \alpha_1 < 0$$

$$(4) V_{NA} = \beta_0 + \beta_1 E_{NA} + \beta_2 I_{NA/A}, \quad \beta_1, \beta_2 > 0$$

$$(5) E_A = \alpha_0 + \alpha_1 Q_A, \quad \alpha_1 < 0$$

$$(6) Q_A = \delta_0 + \delta_1 P_A + \delta_2 I_{NA/A}, \quad \delta_1, \delta_2 > 0$$

The explanation of the variables is as follows:

Y = Gross domestic product per capita

V_A = Value added in agriculture per capita

V_{NA} = Value added in the non-agricultural sector per capita

E = Total employment ($E = E_A + E_{NA}$)

E_A = Agricultural employment

E_{NA} = Non-agricultural employment

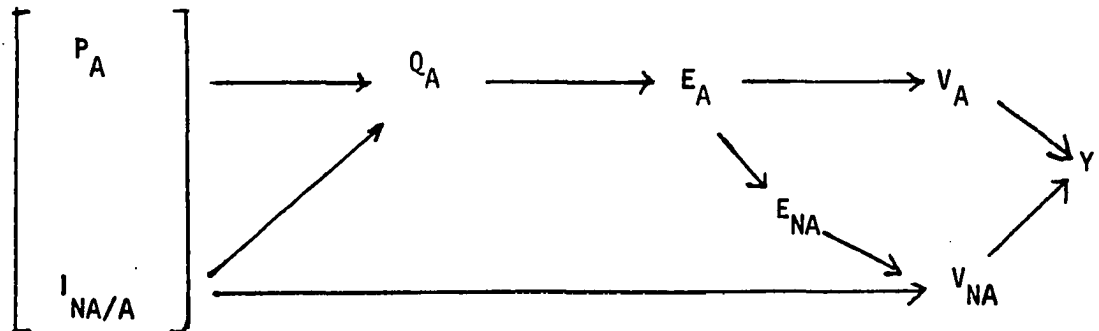
Q_A = Total agricultural output, net of imported feeding stuffs and store cattle

$I_{NA/A}$ = The ratio of gross fixed capital formation in the non-agricultural sector relative to agriculture

P_A = Index of prices of agricultural commodities

where P_A , domestic agricultural prices and $I_{NA/A}$, the ratio of gross fixed capital formation in the non-agricultural sector relative to agriculture, are exogenous variables while the remaining variables are endogenously determined.

The relationship of the variables in the model can be made much clearer through the use of a causal arrow diagram:



The structural model and our regression results are presented in Appendix B at the end of this paper.

The model was estimated for the EEC on annual data of the variables

for 1953-1961, 1962-1969 and for the total 1953 time period. In terms of the coefficient of determination, R^2 , and the significance of the individual coefficients, the model appears to have performed better in the later period and in the two time periods combined.

We solved the model by projecting our variables for 1969, under three hypotheses. The first hypothesis (H_1) was that the outflow of agricultural workers would have followed in 1966-1969 the same trend as in 1962-1965. The second hypothesis (H_2) is that the "Mansholt Plan" was adopted in the 1966-1969 period with the implication that an additional 5 million farmers would have left the agricultural sector. The third hypothesis (H_3) consists if both the "Mansholt Plan" would have been adopted in the above period and all farm support schemes eliminated from agriculture. The elimination of the farm programs in the EEC would have reduced producers' incomes by 50 percent as was estimated in the EEC Commission study (19). Finally the fourth hypothesis (H_4) is that the withdrawal of support from agriculture would not have been accompanied by the implementation of the "Mansholt Plan." The results of our simulations are shown below:

Average Annual Rates of Growth

	<u>Actual</u>		<u>Hypothetical in 1966-69</u>			
	1962-65	1966-69	H_1	H_2	H_3	H_4
Y	4.24	4.19	5.05	11.19	9.91	3.88
E_A	-4.17	-4.00	-5.40	-14.37	-14.37	-5.20

The movement of labor out of agriculture would have been faster (about 14% a year) under H_2 and H_3 and the rate of growth of GDP per capita would have been considerably stimulated in the EEC under the above hypotheses.

Our conclusions will have to be considered as very tentative not only because of the simplicity of our structural model but also because our hypothetical policy changes in the EEC cannot be expected to have had an instantaneous impact on the economy. Our results would indicate that the aggregate rate of growth in the Common Market would have been slowed down if all support arrangements for agriculture were abolished (H_4) but could have been considerably stimulated if any of the other policies had been implemented during the 1966-1969 time period.³

³The model was also estimated for France, Italy, Belgium-Luxembourg, Germany and the Netherlands separately for the total 1953-1969 time period. The individual country equation estimates are presented in Appendix B at the end of this study. In terms of both the coefficient of determination, R^2 , and the significance of the coefficients, the model appears to have performed better for France and Italy.

VI. THE IMPLICATIONS OF ADOPTION OF THE CAP FOR THE UNITED KINGDOM, IRELAND, DENMARK AND WORLD AGRICULTURE

On January 22, 1972, the Treaty of Accession was signed in Brussels between the Common Market countries and the United Kingdom, Denmark, Norway and the Republic of Ireland. The Norwegian Parliament did not ratify the agreement so only the remaining three countries formally entered the Common Market beginning from January 1, 1973. In particular, the entering countries agreed to the Common Agricultural Policy of the six complete membership will be achieved in steps over five years. Special arrangements were made in regard to Britain's Commonwealth sugar imports and to imports of cheese and butter from New Zealand.

It has been widely recognized that acceptance by Britain of the CAP will have broad implications for farm incomes, balance of payments and food costs in the United Kingdom. Here we will summarize some of the major findings on the implications for British agriculture of membership in the EEC. Furthermore, the impact of the adoption of the CAP by Ireland and Denmark will be considered and an attempt will be made to assess the effects of the enlargement of the Common Market for world agriculture.

A. The United Kingdom and the CAP

The entry of Britain in the Common Market is expected to be costly primarily due to participation in the Common Agricultural Policy. This participation will involve the adoption of the "variable-levy-intervention system" and the abolition of the "deficiency-payments" program as well as the gradual adoption of the FEOGA system of financing the CAP. Even though,

in recent years, British farming policy has moved closer to the Common Market's method of protection with the decision in 1970 to change to a system of import levies, the adoption of the CAP will imply domestic support prices much higher than world market prices. This could lead to a significant expansion of agricultural output in Britain. Under the deficiency-payments system the United Kingdom has granted subsidies to farmers and allowed the free import of temperate zone commodities, thus maintaining food costs relatively low and farm incomes well protected.

The financial repercussions of the acceptance of the CAP by Britain cannot be accurately assessed due to the high degree of uncertainty involved in forecasting the changes that will result from this policy shift. Nonetheless, several attempts have been made to provide a quantitative estimate of these changes. The financial consequences will be felt both on the British budget and on the balance of payments. The possibility also exists that other factors, like trade creation in manufacturing products and the "growth or dynamic effects" of integration (43,55,103), could affect positively the United Kingdom's balance of payments.

In comparing the British system (deficiency payments) with the EEC system of support (variable levies) the difference between the two is smaller than commonly accepted not only because the United Kingdom has protected its agricultural sector with a wide range of instruments including subsidies, duties and import quotas but also because since 1971 there have been moves in Britain in the direction of substituting existing protective schemes with an import levy system. Consequently, any differences between the British and EEC price support schemes, should be

seen as differences in degree rather than two fundamentally different systems.

In general, the two systems of protection differ in the sense that the CAP restricts imports to a greater degree than the deficiency payments system and by the fact that under the CAP, the cost of supporting agriculture is borne directly by the consumer through higher market prices while in Britain the consumer pays lower prices and the loss is largely borne by the taxpayer. So, if the adoption by the United Kingdom of a variable levy scheme would improve the farmers' welfare and reduce the consumers' welfare, the deficiency payments program would make farmers better off and consumers no worse off as compared with a free trade alternative.

The adoption by Britain of the Common Agricultural Policy is expected to directly affect: a) domestic farm prices, b) trade patterns of temperate zone products, c) the Government Budget, and d) United Kingdom's farmers. These direct effects can next be analyzed in terms of their impact on: a) Britain's balance of payments and b) net gains or losses of United Kingdom's welfare, as approximated by the real value of British people's incomes, associated with the above balance of payments changes.

The support of high domestic farm prices (following the elimination of deficiency payments), the replacement of low-cost food imports from EFTA, North America and elsewhere by high-cost products from intra-EEC sources and the application of variable levies on extra-Community imports will involve an increase in the price of several commodities (especially cereals, beef and veal, pigmeat, cheese and butter). The rise in the

retail price index for food, faster than would otherwise occur, has been estimated originally (43,11) at 18-26% (mid-point 22%), and more recently (27,40,41,90) at about 15 percent over a six year period. As a result of rising food prices, the consumer price index is expected to rise by an additional 4 - 5% (11) to about 3% over the same period (90,40,41). Thus, not only is the value of imports expected to rise, but also the increase in the cost of living could affect the general cost structure of the economy and finally reduce the competitiveness of Britain's exports of manufactures.

The entry of Britain in the Community could cause profound changes in the trade patterns of temperate zone commodities. These changes, no doubt, will involve buying food from intra-Community sources rather than from cheaper sources outside the Common Market. It is very likely that North American and Commonwealth exporters will suffer sharp losses of agricultural export markets. The United Kingdom was still in 1969, as can be seen from Table III.4, one of the world's largest commercial importers of temperate zone goods, and has increasingly been shifting its sources of supply from the United States and Commonwealth countries towards EFTA and EEC countries. The greatest diversion of trade away from the above sources and in the direction of EFTA and the EEC appears to have taken place in eggs, wheat, fodder and forest products and this trend is expected to accelerate after Britain's entry. Britain, Ireland and Denmark could become the recipient of EEC Agricultural surpluses. This trend should be affected also by a stimulation in the entering countries of the level of agricultural production that would increase the degree of

self-sufficiency in several products. According to some recent studies (31,37,41,27) it is expected that the output of wheat, barley and milk would be stimulated by adoption of the CAP, while a significant rise in the consumption of meat (with the possible exception of beef and veal) and a shift from butter to margarine could take place. According to Josling (41, p. 88) it is expected that the United Kingdom's imports from extra-Community sources by 1980 could decline (by about half the value in 1972) for pigmeat and cereals and remain unchanged for sugar, butter and cheese. This will strengthen the trend towards trade diversion in the EEC for temperate zone goods.

Finally, according to a recent Michigan State University study (27) it is not unlikely that significant surpluses in grain could result for the entering countries.

According to recent British Government estimates (90), the budget of the enlarged EEC is expected to grow to about \$4 billion in 1977. Before the entry to the Common Market, the British government has been paying subsidies directly to the farmers, while after the adoption of the CAP Britain will have to contribute to FEOGA. The contributions to this fund can be interpreted as a subsidy to Community farmers and in particular to French agriculture. The contribution of the United Kingdom to this fund has been estimated to be between 340 to 620 million pounds (40,11,90) by 1977, with a more likely figure in the neighborhood of 400 million pounds (61,11). This would correspond to about one billion dollars or 1% of United Kingdom's GNP.

The adoption of EEC prices is expected (11) to increase net

agricultural output by an additional 3-10%, implying a possible reduction of temperate zone food imports by 5-20%, but also to increase producer costs (one third of which are feed-stuffs). This increase in agricultural production is not expected to be shared by all British farmers. Producers of fruits and vegetables, and possibly British offshore fishermen, could be seriously hurt.

The above changes in prices, consumption, production and trade could cause considerable strain upon the United Kingdom's balance of payments. As a result of the adoption of the CAP alone, the cost to the balance of payments has been estimated by the first Government White Paper (11) from 90 million to 1 billion pounds while more recent estimates (61) put this cost around 400 million pounds or 1% of Britain's GNP. The net balance of payments effect would be considerably smaller and it appears that membership is not likely to cause any difficulty for Britain's balance of payments position during the transition period. From the viewpoint of welfare gains or costs, the rise in imported food prices and the net contribution to the Community budget are estimated to contribute negatively to economic welfare from a maximum of 650 million pounds by 1980 (44) to the order of 350-400 million pounds (41,61).

B. Ireland and Denmark in the EEC

About 16% of Denmark's population is engaged in agriculture while the same figure for Ireland is about 30%. The Irish Republic is economically linked to the United Kingdom and is expected (27,31) that the adoption of the CAP would ensure a rise in the prices of meat, butter and cheese, and imports of cattle could slow down while total exports could increase

for grains, especially from intra-EEC sources.

In the case of Denmark, adoption of the CAP could aggravate EEC surpluses of pigmeat and dairy products. A deficit in grain can be expected along with a stimulation of Denmark's exports of dairy products, beef and pigmeat to both intra and extra-EEC countries, because of CAP's export restitutions.

C. Implications for World Agricultural Trade

We will now briefly review some trends in production, consumption and trade in selected temperate zone products in the United Kingdom over the 1953-1969 period, and next, we will summarize some estimates attempted in the literature regarding the implications of the enlargement of the EEC on agricultural self-sufficiency in the community and, consequently, on world agricultural trade.

Table VI.1 presents the trends in output, consumption and trade of agricultural products in Britain. The first column shows production, the second column gives the change in stocks, the third exports, the fourth total imports and the last consumption. The fifth and sixth columns indicate, respectively, imports from intra-EFTA and extra-EFTA sources, and the remaining two columns show imports from EEC and extra-EEC countries.

The United Kingdom is a net importer of temperate zone products and has, in general, a low degree of self-sufficiency, as can be seen from Table IV.2. The only commodity groups with a relatively high degree of self-sufficiency in Britain were milk, eggs, fish, barley, and "other coarse grains."

Consumption of dairy products and eggs has increased more rapidly

Table VI.1. Trends in production, consumption and trade in the United Kingdom for various temperate zone foodstuffs, 1953/54 - 1968/69^a (1000 metric tons)

Year	Pro- duction (1)	Change in stocks (2)	Exports (3)	Total Imports (4)	EFTA		EEC ^b		Consump- tion (9)
					M ⁱ	M ^{ex}	M ⁱ	M ^{ex}	
					(5)	(6)	(7)	(8)	
<hr/>									
<u>Total Meat (SITC: 01)</u>									
53/54	1950	13	-24	1269	251	1018	64	1205	3208
61/62	2429	41	-104	1425	351	1074	72	1353	3791
68/69	2663	6	-113	1410	387	1023	64	1346	3966
<u>Milk (SITC: 022)</u>									
53/54	10996	44	-52	102	12	90	5	97	11090
61/62	13184	26	-70	125	18	107	21	104	13265
68/69	13853	53	-123	105	16	89	16	89	13888
<u>Butter (SITC: 023)</u>									
53/54	27	20	-5	296	108	188	13	283	338
61/62	59	22	-6	414	102	312	32	382	489
68/69	54	13	-4	449	109	340	21	428	512
<u>Cheese (SITC: 024)</u>									
53/54	66	47	-6	115	14	101	10	105	222
61/62	118	-11	-4	141	15	126	11	130	244
68/69	120	1	-4	171	17	154	24	147	288

^aData sources: (64-67). Note the following definitions referring to the columns of this table:
(g) = (1) + (2) - (3) + (4), and (4) = (5) + (6) = (7) + (8).

^bWhere Mⁱ = intra-Union Imports and M^{ex} = extra-Union Imports.

Table VI.1. (Continued)

Year	Pro- duction	Change in stocks	Exports	Total Imports	EFTA		EEC ^b		Consump- tion
					M ⁱ	M ^{ex}	M ⁱ	M ^{ex}	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Eggs</u> (SITC: 025)									
53/54	572	2	-4	70	14	56	-	70	640
61/62	799	5	-3	18	7	11	1	17	819
68/69	914	-	-7	13	7	6	1	12	920
<u>Fish</u> (SITC: 03)									
53/54	978	3	-62	133	49	84	7	126	1052
61/62	786	-4	-42	217	16	201	2	215	957
68/69	922	1	-92	282	78	204	13	269	1113
<u>Wheat</u> (SITC: 041)									
53/54	2828	221	-	4657	42	4615	70	4587	7706
51/62	2614	-33	-6	4128	2	4126	178	3950	6703
68/69	3469	15	-13	4470	220	4250	1452	3018	7941
<u>Rice</u> (STIC: 042)									
53/54	-	-	-7	94	-	94	32	62	87
61/62	-	-	-4	124	-	124	24	100	124
68/69	-	-	-10	124	-	124	2	122	114

Table VI.1. (Continued)

Year	Pro- duction	Change in stocks	Exports	Total Imports	EFTA		EEC ^b		Consump- tion
					M ⁱ	M ^{ex}	M ⁱ	M ^{ex}	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Barley (SITC: 043)</u>									
53/54	2280	91	-77	1119	7	1112	3	1116	3413
61/62	5054	98	-340	539	3	536	127	412	5351
68/69	8270	69	-76	372	69	303	39	333	8635
<u>Maize (SITC: 044)</u>									
53/54	-	-25	-	1916	-	1916	32	1884	1891
61/62	-	-150	-	4580	1	4579	425	4155	4430
68/69	-	16	-14	3621	-	3621	636	2985	3623
<u>Other Cereals (045,046,047,048)</u>									
53/54	7239	197	-136	668	1	667	11	657	7968
61/62	6037	-5	-77	632	2	630	32	600	6587
68/69	5605	36	-116	333	13	320	150	183	5858
<u>Fruits and Vegetables (SITC: 05)</u>									
53/54	11494	37	-141	2861	8	2853	351	2510	14251
61/62	10504	55	-110	3680	22	3658	610	3070	14129
68/69	11574	310	-119	3704	56	3648	553	3151	15469

than output in the United Kingdom, thus stimulating imports, primarily from Western Europe. In particular, the largest increase in imports has occurred in cheese, fish and wheat. Imports from Intra-EFTA countries have been stimulated, and imports from non-EFTA members reduced, in the case of meat, fish, wheat, barley, fruits and vegetables. The United Kingdom has increased its share of imports from Common Market countries for live animals, eggs, wheat, maize, "other cereals," and feed-stuffs. The relative increase of imports from the EEC has been greater for wheat (that rose by eightfold in 1961-69) and "other cereals" that increased fourfold over the same time period. Trade in the latter co-modities was diverted primarily from Canada and the United States.

The adoption of the EEC Common Agricultural Policy by Britain, Ireland and Denmark is expected, as we mentioned earlier, to increase the prices of temperate zone products, in a gradual fashion, over the five-year transitional period. In a recent FAO study by Gupta and Greenfield (31) the estimated percentage change in producer prices as a result of entry in the EEC over the 1969/70 - 1979/80 period is as follows:

	U.K.	Ireland	Denmark
Wheat	38.1	23.4	29.9
Barley	35.9	36.2	35.2
Oats	23.0	48.4	29.2
Rye	85.4	--	31.1
Milk	10.1	55.1	32.0
Cattle	45.3	55.9	48.9
Pig meat	50.8	43.8	24.6
Poultry (for meat production)	105.8	71.6	82.8
Eggs	3.7	-3.2	27.9
Change in the Index of Producer Prices	25.6	26.5	18.4
Rate of change per annum, 1969/70-1979/80	2.3	2.4	1.7

We can observe from the above estimates that producer prices of temperate zone products are expected to rise faster in Ireland and Britain. In particular, the fastest rise of producer prices in England is expected to occur in rye and meat products, while the largest increase in Ireland should occur in meat and dairy products. In Denmark the fastest increase in prices should occur in barley, cattle and poultry.

The increase in farm prices in the United Kingdom, Ireland and Denmark would probably cause an increase in domestic production, thus raising the degree of self-sufficiency in agricultural products. This trend could result in a diminution of import demand, and, because of the discriminatory and protectionist nature of the variable-levy system of the CAP, one would expect a trade diverting effect from low-cost extra-EEC sources towards high-cost sources from within the enlarged community. It is not impossible that, in the long run, a consequence of the increase in output in the entering countries, along with the system of export restitutions of the CAP could be a significant rise in exports of some temperate zone products from the United Kingdom, Ireland and Denmark.

The FAO study (31) has estimated the effect of the enlargement of the EEC to be a reduction of Western European net import requirements of wheat, coarse grains, sugar, milk products and meat from 3.4 to 2.2 billion dollars (in constant 1970 prices). The impact of EEC enlargement on individual commodity groups was found to be the generation of higher surpluses in meat and dairy products before the entering countries.

In a recent study by Marsh (58, p. 37) some previously published FAO projections of production and consumption of agricultural products for

1975 were adapted and the results can be summarized below:

Production Minus Consumption Balance by 1975:
(thousand metric tons)

	EEC (the six)	Entering New Members	Enlarged EEC (the ten)
Wheat	+3355	-2951	+404
Coarse grains	-14127	-3300	-17427
Pig meat	+80	+82	+162
Poultry meat	-77	+98	+21
Beef and Veal	-638	-65	-703

Substantial net imports are expected in the enlarged EEC only in coarse grains (mainly maize) and beef and veal.

In conclusion, it appears that the enlargement of the Common Market could have adverse effects on world trade of temperate zone products as a result of the protectionist nature of the CAP and the significant rise in agricultural production in the Common Market.

VII. CONCLUSIONS

In the preceding sections, we have examined the effect of the formation of the Common Market and EFTA on world trade of temperate zone products. The main discriminatory effect of the adoption of EFTA on agricultural trade has been the promotion of bilateral trade agreements among the member countries. Since the formation of the EFTA regional group, total imports of temperate zone products have declined while total exports increased quite rapidly. The exports of EFTA have been increasingly diverted towards the EFTA group, the U.S. and Japan. Over the period under consideration, the EFTA countries have increased their dependence on imports of temperate products from the Common Market and Western Europe. Within the EFTA group, Britain has been a net importer of these products while the rest of EFTA countries have been net exporters. The major commodities imported by the EFTA group have been meat, dairy products, fruits and vegetables, and forest products. The most important exports of this regional group have been wood, cork and pulp, meat and fish products.

The implementation of the EEC Common Agricultural Policy has had as an effect to increase the degree of protection of the agricultural sector in the Community, as we saw in Chapter II.D, and to stimulate domestic production of several temperate zone products. The more heavily protected commodities are live animals and meat, dairy products and cereals (especially wheat, barley and maize). As a consequence of the above trends, the degree of self-sufficiency in the Community has

risen for dairy products (mainly butter and cheese) and cereals (especially wheat, barley, and "other cereals"). The effect of the above developments has been a slowdown in the import demand for some goods and an adverse effect on non-member exporting countries.

Since the implementation of the CAP, EEC exports of temperate products have risen faster than total imports of these commodities. The most important commodities exported by the Common Market have been meat and dairy products, and fruits and vegetables, while the major commodities imported were meat, fruits and vegetables and forest products. The increase of Common Market imports of temperate zone goods from member countries has been particularly marked in the period under consideration, and trade seems to have been diverted away from non-member countries. From our analytical study based on estimated import functions of the EEC presented in Chapter IV, we concluded that the trade diversion effect of the CAP on trade of temperate products amounted by 1969 to about 1.75 billion dollars, while a modest trade creation effect (about 0.66 billion dollars) has occurred primarily in meat, dairy products and barley. Furthermore, as a result of the growing surplus of several products and the policy of export restitutions, EEC exports of temperate zone products have been significantly stimulated after the formation of the Common Market. The best customers of the Community, besides the member countries themselves, for these products have been the EFTA countries, Asia and the Middle-East.

In addition to evidence about a considerable trade diversion effect of the CAP on EEC trade of temperate products, we have tentatively

estimated in Chapter V the effect of the adoption of the CAP on agricultural labor mobility and aggregate income growth in the EEC. The preliminary results tend to indicate that the increased protection of agriculture in the Community has slowed down the rate of out-migration of labor from the agricultural sector and, thus, has contributed to a slower aggregate growth of GDP per capita than would have occurred at the absence of the CAP.

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X, APPENDIX A:

**REGRESSION ESTIMATES OF EEC IMPORT DEMAND
FUNCTIONS OF TEMPERATE ZONE PRODUCTS**

Table A-1. Commodity groups used in the present study

Commodity Breakdown	Standard International Trade Classification
1. Live animals	001
2. Meat and meat products	01
3. Dairy products	022, 023, 024
4. Eggs	025
5. Fish and fish products	031, 032
6. Wheat	041
7. Rice	042
8. Barley	043
9. Maize	044
10. Other cereals and preparations	045, 046, 047, 048
11. Fruits and vegetables	05
12. Feed-stuffs	081
13. Hides, skins and furs	211, 212
14. Wood, cork and pulp	24, 251

Table A-2. All temperate zone products

Years			\bar{R}^2	D.W.
(1) 1953-69	M	= -6072.26 + 0.043 Y _r + 1375.46 Peec/Pw (14.622)*** (1.062)	0.988	2.21
(2) 1953-61	M	= - 978.47 + 6.336 Y _{pc} - 2324.51 Peec/Pw (32.561)*** (3.391)**	0.995	1.55
(3) 1961-69	M	= - 343.46 + 0.0229 Y + 1090.96 Peec/Pw (8.860)*** (0.523)	0.958	1.97
(1) 1953-69	M _{ex}	= -4491.30 + 3.807 Y _{pc} + 2274.102 Peec/Pw (6.058)*** (1.380)	0.949	1.34
(2) 1953-61	M _{ex}	= - 384.57 + 4.421 Y _{pc} - 1536.191 Peec/Pw (27.982)*** (2.760)*	0.993	1.82
(3) 1961-69	M _{ex}	= -2350.376 + 0.0167 Y _r + 2366.53 Peec/Pw (2.838)* (0.941)	0.769	2.22
(1) 1953-69	M _{int}	= 1203.74 + 0.0129 Y - 1836.91 Peec/Pw (12.170)*** (2.254)	0.971	1.71
(2) 1953-61	M _{int}	= - 593.90 + 1.915 Y _{pc} - 788.317 Peec/Pw (12.062)*** (1.410)	0.965	1.75
(3) 1961-69	M _{int}	= -44690.49 + 5.026 Y _{pc} - 1429.49 Peec/Pw (15.115)*** (1.877)	0.980	2.20

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-2. (Continued)

Years	(Logarithmic Equations)					\bar{R}^2	D.W.
(1) 1953-69	l_n^M	=	- 3.81	+ $1.0187 l_n^Y$ (15.702)***	- $0.081 l_n^{Peec/Pw}$ (0.277)	0.989	2.17
(2) 1953-61	l_n^M	=	- 5.319	+ $1.150 l_n^Y$ (18.285)***	- $0.309 l_n^{Peec/Pw}$ (0.873)	0.985	2.09
(3) 1961-69	l_n^M	=	- 1.97	+ $0.865 l_n^Y$ (9.083)***	+ $0.177 l_n^{Peec/Pw}$ (0.485)	0.965	2.40
(1) 1953-69	$l_n^{M_{ex}}$	=	- 1.46	+ $0.798 l_n^Y$ (7.464)***	+ $0.160 l_n^{Peec/Pw}$ (0.327)	0.958	1.89
(2) 1953-61	$l_n^{M_{ex}}$	=	- 4.038	+ $1.0227 l_n^Y$ (20.691)***	- $0.269 l_n^{Peec/Pw}$ (0.964)	0.988	2.01
(3) 1961-69	$l_n^{M_{ex}}$	=	2.191	+ $0.496 l_n^Y$ (3.151)**	+ $0.571 l_n^{Peec/Pw}$ (0.944)	0.819	1.92
(1) 1953-69	$l_n^{M_{int}}$	=	- 14.74	+ $3.0049 l_n^{Ypc}$ (15.254)***	- $0.254 l_n^{Peec/Pw}$ (0.545)	0.987	2.10
(2) 1953-61	$l_n^{M_{int}}$	=	- 12.96	+ $2.787 l_n^{Ypc}$ (14.607)***	- $1.053 l_n^{Peec/Pw}$ (1.583)	0.976	1.99
(3) 1961-69	$l_n^{M_{int}}$	=	- 19.12	+ $3.595 l_n^{Ypc}$ (27.867)***	- $0.407 l_n^{Peec/Pw}$ (1.747)	0.995	2.13

Table A-3. Animals and animal products

Years	(SITC: 001, 01, 02, 03)					\bar{R}^2	D.W.
(1) 1953-69	M	= -	2837.94	+ 1.678 Ypc (5.971)***	+ 1361.855 Peec/Pw (2.988)**	0.978	2.53
(2) 1953-61	M	= -	999.39	+ 1.896 Ypc (13.990)***	- 452.51 Peec/Pw (0.998)	0.985	2.11
(3) 1961-69	M	= -	3809.85	+ 3.385 Ypc (5.232)***	- 140.799 Peec/Pw (0.196)	0.978	2.57
(1) 1953-69	M _{ex}	= -	611.25	+ 1.353 Ypc (5.079)***	- 450.216 Peec/Pw (1.042)	0.907	1.74
(2) 1953-51	M _{ex}	= -	966.18	+ 1.1205 Ypc (5.393)***	- 105.77 Peec/Pw (0.152)	0.919	1.96
(3) 1961-69	M _{ex}	= -	104.70	+ 0.0085 Yr (1.554)	- 755.23 Peec/Pw (0.664)	0.614	1.83
(1) 1953-69	M _{int}	= -	2226.69	+ 0.325 Ypc (3.532)***	+ 1812.07 Peec/Pw (1.027)	0.922	1.85
(2) 1953-61	M _{int}	= -	29.21	+ 0.776 Ypc (7.246)***	- 558.28 Peec/Pw (1.559)	0.934	1.79
(3) 1961-69	M _{int}	= -	3307.91	+ 2.152 Ypc (3.037)**	+ 230.545 Peec/Pw (0.292)	0.951	1.91

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-3. (Continued)

Years	(Logarithmic Equations)				\bar{R}^2	D.W.
(1) 1953-69	1_n^M	= - 10.33	+ 1.439 1_n^Y (10.915)***	- 0.423 $1_n^{Peec/Pw}$ (1.164)	0.985	2.10
(2) 1953-61	1_n^M	= - 13.41	+ 1.703 1_n^Y (9.933)***	- 0.849 $1_n^{Peec/Pw}$ (1.051)	0.971	1.72
(3) 1961-69	1_n^M	= - 7.78	+ 1.218 1_n^Y (3.967)**	+ 0.199 $1_n^{Peec/Pw}$ (0.348)	0.974	2.37
(1) 1953-69	$1_n^{M_{ex}}$	= - 13.37	+ 1.676 1_n^Y (7.258)***	- 1.795 $1_n^{Peec/Pw}$ (2.816)*	0.935	2.20
(2) 1953-61	$1_n^{M_{ex}}$	= - 13.752	+ 1.692 1_n^Y (5.429)***	- 0.571 $1_n^{Peec/Pw}$ (0.388)	0.915	1.59
(3) 1961-69	$1_n^{M_{ex}}$	= - 7.74	+ 1.201 1_n^Y (1.674)	- 0.863 $1_n^{Peec/Pw}$ (0.649)	0.687	1.52
(1) 1953-69	$1_n^{M_{int}}$	= - 9.37	+ 2.078 $1_n^{Y_{pc}}$ (6.513)***	+ 1.552 $1_n^{Peec/Pw}$ (3.414)*	0.978	2.13
(2) 1953-61	$1_n^{M_{int}}$	= - 14.30	+ 2.828 $1_n^{Y_{pc}}$ (6.784)***	- 1.334 $1_n^{Peec/Pw}$ (1.100)	0.931	1.72
(3) 1961-69	$1_n^{M_{int}}$	= - 17.44	+ 3.177 $1_n^{Y_{pc}}$ (5.668)***	+ 0.986 $1_n^{Peec/Pw}$ (2.007)	0.991	2.31

Table A-4. All cereals and preparations

Years			(SITC: 04)			\bar{R}^2	D.W.
(1) 1953-69	M	=	253.650	+ 0.0078 Yr (8.107)***	- 612.18 Peec/Pw (2.001)	0.930	1.85
(2) 1953-61	M	=	1197.86	+ 0.849 Ypc (7.135)***	- 978.285 Peec/Pw - 0.019 Δ ST (4.839)*** (1.736)	0.917	2.98
(3) 1961-69	M	=	113.02	+ 0.0072 Yr (3.850)***	- 414.876 Peec/Pw (0.804)	0.800	1.81
(1) 1953-69	M _{ex}	=	539.74	+ 0.0031 Yr (2.270)	- 204.638 Peec/Pw (0.476)	0.473	2.61
(2) 1953-61	M _{ex}	=	1052.18	+ 0.487 Ypc (3.549)***	- 859.946 Peec/Pw (2.553)*	0.574	1.93
(3) 1961-69	M _{ex}	=	816.74	- 0.223 Ypc (0.381)	+ 424.470 Peec/Pw (0.508)	0.291	1.86
(1) 1953-69	M _{int}	=	345.18	+ 0.0029 Y (6.820)***	+ 512.56 Peec/Pw (2.165)	0.890	2.64
(2) 1953-61	M _{int}	=	246.90	+ 0.465 Ypc (6.987)***	+ 534.417 Peec/Pw (4.635)***	0.859	1.83
(3) 1961-69	M _{int}	=	-1273.61	+ 1.261 Ypc (7.881)***	- 404.436 Peec/Pw (1.721)	0.942	2.40

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-4. (Continued)

Years	(Logarithmic Equations)				\bar{R}^2	D.W.
(1) 1953-69	$l_n M$	=	- 3.84 + 0.925 $l_n Y$ (7.306)***	- 1.070 $l_n Peec/Pw$ (2.331)	0.915	2.71
(2) 1953-61	$l_n M$	=	- 1.52 + 0.742 $l_n Y$ (5.379)***	- 1.5038 $l_n Peec/Pw$ (3.627)***	0.776	1.97
(3) 1961-69	$l_n M$	=	- 2.80 + 0.819 $l_n Y$ (3.795)***	- 0.487 $l_n Peec/Pw$ (0.814)	0.812	2.52
(1) 1953-69	$l_n M_{ex}$	=	0.69 + 0.527 $l_n Y$ (2.928)*	- 0.679 $l_n Peec/Pw$ (1.041)	0.578	1.88
(2) 1953-61	$l_n M_{ex}$	=	1.78 + 0.738 $l_n Y_{pc}$ (3.086)**	- 1.016 $l_n Peec/Pw$ (2.289)	0.488	1.91
(3) 1961-69	$l_n M_{ex}$	=	10.18 - 0.503 $l_n Y_{pc}$ (0.545)	+ 0.884 $l_n Peec/Pw$ (0.734)	0.424	1.82
(1) 1953-69	$l_n M_{int}$	=	- 30.05 + 2.996 $l_n Y$ (5.954)***	- 3.797 $l_n Peec/Pw$ (2.080)	0.867	1.65
(2) 1953-61	$l_n M_{int}$	=	- 41.52 + 4.074 $l_n Y$ (4.349)***	- 7.878 $l_n Peec/Pw$ (2.800)*	0.690	1.98
(3) 1961-69	$l_n M_{int}$	=	25.91 + 2.536 $l_n Y$ (6.140)***	- 0.604 $l_n Peec/Pw$ (0.528)	0.937	2.01

Table A-5. Live animals (SITC: 001)

					\bar{R}^2	D.W.
<u>1953-1961</u>						
(1)	M	=	-22.60 + 0.223 Y (15.789)***	- 147.715 Peec/Pw (1.854)	0.980	2.53
(2)	M _{ex}	=	-123.44 + 0.161 Y (8.101)***	- 0.868 Peec/Pw (0.008)	0.936	1.74
(3)	M _{int}	=	-31.27 + 0.103 Y _r (3.844)***	- 182.230 Peec/Pw (1.851)	0.640	2.10
<u>1961-1969</u>						
(1)	M	=	-100.04 + 0.238 Y (2.470)*	- 154.808 Peec/Pw (0.518)	0.858	1.74
(2)	M _{ex}	=	169.51 + 0.146 Y (2.264)	- 240.385 Peec/Pw (1.203)	0.657	1.96
(3)	M _{int}	+	-623.04 + 0.397 Y _{pc} (1.638)	+ 19.243 Peec/Pw (0.890)	0.822	2.15

*The coefficient is significant at the 10% level.

**The coefficient is significant at the 5% level.

***The coefficient is significant at the 1% level.

Table A-5. (Continued)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	l_n^M	=	- 21.22	+ $\frac{2.205}{(18.156)^{***}} l_n^Y$	- $\frac{0.965}{(1.980)} l_n^{Peec/Pw}$	0.984	2.51
(2)	$l_n^{M_{ex}}$	=	- 19.20	+ $\frac{2.007}{(7.139)^{***}} l_n^Y$	+ $\frac{0.195}{(0.173)} l_n^{Peec/Pw}$	0.918	1.59
(3)	$l_n^{M_{int}}$	=	- 73.71	+ $\frac{6.367}{(3.734)^{***}} l_n^{Yr}$	- $\frac{5.517}{(1.551)} l_n^{Peec/Pw}$	0.636	1.92
<u>1961-1969</u>							
(1)	l_n^M	=	- 12.96	+ $\frac{1.506}{(2.721)^*} l_n^Y$	- $\frac{0.222}{(0.271)} l_n^{Peec/Pw}$	0.870	2.11
(2)	$l_n^{M_{ex}}$	=	- 10.80	+ $\frac{1.322}{(2.207)} l_n^Y$	- $\frac{0.802}{(0.907)} l_n^{Peec/Pw}$	0.660	1.91
(3)	$l_n^{M_{int}}$	=	- 49.27	+ $\frac{4.298}{(2.041)} l_n^{Yr}$	+ $\frac{0.079}{(0.443)} l_n^{Peec/Pw}$	0.845	1.79

Table A-6. Meat and meat products (SITC: 01)

					\bar{R}^2	D.W.
<u>1953-1961</u>						
(1)	M	=	- 269.96 + 0.414 Y (15.165)***	- 107.646 Peec/Pw (4.407)***	0.972	1.93
(2)	M _{ex}	=	- 138.39 + 0.267 Y (10.977)***	- 95.900 Peec/Pw (4.408)***	0.941	1.54
(3)	M _{int}	=	- 131.57 + 0.147 Y (5.664)***	- 11.746 Peec/Pw (0.505)	0.851	1.43
<u>1961-1969</u>						
(1)	M	=	- 869.06 + 0.393 Y (8.019)***	+ 450.613 Peec/Pw (2.270)	0.973	2.10
(2)	M _{ex}	=	- 330.73 + 0.322 Yr (3.125)**	- 69.760 Peec/Pw (0.498)	0.519	1.90
(3)	M _{int}	=	- 631.01 + 0.307 Y (14.767)***	+ 62.285 Peec/Pw (1.170)	0.964	2.05

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-6. (Continued)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	$l_n M$	=	- 23.96	+ $\frac{2.467 l_n Y}{(20.507)***}$	- $\frac{0.469 l_n Peec/Pw}{(4.979)***}$	0.984	1.71
(2)	$l_n M_{ex}$	=	- 23.518	+ $\frac{2.398 l_n Y}{(9.909)**}$	- $\frac{0.606 l_n Peec/Pw}{(3.198)**}$	0.929	1.33
(3)	$l_n M_{int}$	=	- 26.64	+ $\frac{2.595 l_n Y}{(8.264)***}$	- $\frac{0.200 l_n Peec/Pw}{(0.815)}$	0.917	1.41
<u>1961-1969</u>							
(1)	$l_n M$	=	- 9.22	+ $\frac{1.245 l_n Y}{(5.549)***}$	+ $\frac{1.130 l_n Peec/Pw}{(3.186)**}$	0.970	2.06
(2)	$l_n M_{ex}$	=	- 10.827	+ $\frac{1.350 l_n Y}{(3.825)***}$	- $\frac{0.198 l_n Peec/Pw}{(0.464)}$	0.621	1.98
(3)	$l_n M_{int}$	=	- 24.43	+ $\frac{2.398 l_n Y}{(26.011)***}$	+ $\frac{0.133 l_n Peec/Pw}{(1.188)}$	0.988	2.16

Table A-7. Dairy products (SITC: 022, 023, 024)

							\bar{R}^2	D.W.
<u>1953-1961</u>								
(1)	M	=	- 14.04	+ 0.125 Y (5.326)***	- 13.063 Peec/Pw (0.274)	+ 0.16 Δ ST (0.199)	0.874	2.62
(2)	M _{ex}	=	-151.80	+ 0.442 Yr (1.309)	+ 99.032 Peec/Pw (2.143)	+ 0.48 Δ ST (0.208)	0.683	2.43
(3)	M _{int}	=	121.288	+ 0.903 Y (5.375)***	- 105.682 Peec/Pw (3.077)**	+ 0.127 Δ ST (0.220)	0.813	2.15
<u>1961-1969</u>								
(1)	M	=	-196.14	+ 0.188 Y (4.579)***	+ 8.738 Peec/Pw (0.066)	- 0.123 Δ ST (-0.858)	0.974	1.39
(2)	M _{ex}	=	286.2	+ 0.159 Yr (3.873)***	- 300.96 Peec/Pw (4.234)***	- 0.104 Δ ST (-1.335)	0.807	2.68
(3)	M _{int}	=	-669.93	+ 0.116 Y (2.573)*	+ 285.689 Peec/Pw (1.968)	- 0.013 Δ ST	0.082	2.24

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-7. (Continued)

							\bar{R}^2	D.W.
<u>1953-1961</u>								
(1)	$1_n M$	=	- 7.17	+	$1.048 1_n Y$ (4.146)***	-	$0.170 1_n Peec/Pw$ (0.314)	- $0.853 1_n \Delta ST$ (-0.074) 0.820 2.62
(2)	$1_n M_{ex}$	=	- 3.11	+	$0.578 1_n Y$ (1.204)	+	$1.480 1_n Peec/Pw$ (1.440)	0.609 2.30
(3)	$1_n M_{int}$	=	- 13.33	+	$1.612 1_n Y$ (4.362)***	-	$2.253 1_n Peec/Pw$ (2.767)*	- $0.049 1_n \Delta ST$ (-0.055) 0.735 2.40
<u>1961-1969</u>								
(1)	$1_n M$	=	- 12.48	+	$1.595 1_n Y$ (5.617)**	-	$0.139 1_n Peec/Pw$ (0.212)	- $0.229 1_n \Delta ST$ (-0.567) 0.977 1.80
(2)	$1_n M_{ex}$	=	- 9.95	+	$1.657 1_n Y$ (3.527)**	-	$4.171 1_n Peec/Pw$ (3.855)***	- $0.448 1_n \Delta ST$ (-0.954) 0.833 2.05
(3)	$1_n M_{int}$	=	- 19.72	+	$1.781 1_n Y$ (3.271)**	-	$1.431 1_n Peec/Pw$ (1.141)	- $0.242 1_n \Delta ST$ 0.312 2.18

Table A-8. Eggs (SITC: 025)

							\bar{R}^2	D.W.
<u>1953-1951</u>								
(1)	M	=	254.98	+	0.231 Ypc (7.588)***	- 330.47 Peec/Pw (1.817)	0.905	0.91
(2)	M _{ex}	=	218.44	+	0.125 Ypc (6.059)***	- 261.52 Peec/Pw (2.110)	0.869	0.99
(3)	M _{int}	=	36.54	+	0.105 Ypc (8.211)***	- 68.95 Peec/Pw (0.899)	0.912	1.12
<u>1961-1969</u>								
(1)	M	=	464.53	-	0.960 Yr (2.601)*	- 45.26 Peec/Pw (0.315)	0.594	0.99
(2)	M _{ex}	=	241.69	-	0.770 Yr (4.185)***	+ 23.216 Peec/Pw (0.324)	0.761	1.20
(3)	M _{int}	=	222.84	-	0.190 Yr (0.837)	- 68.476 Peec/Pw (0.721)	0.360	1.11

*The coefficient is significant at the 10% level.

**The coefficient is significant at the 5% level.

***The coefficient is significant at the 1% level.

Table A-8. (Continued)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	l_n^M	=	- 8.15	+ 1.140 l_n^Y (7.308)***	- 2.380 $l_n^{Peec/Pw}$ (1.825)	0.902	0.97
(2)	$l_n^{M_{ex}}$	=	- 11.69	+ 1.391 l_n^Y (6.222)***	- 4.193 $l_n^{Peec/Pw}$ (2.243)	0.879	0.98
(3)	$l_n^{M_{int}}$	=	- 6.56	+ 0.939 l_n^Y (7.678)***	- 0.907 $l_n^{Peec/Pw}$ (0.887)	0.903	1.12
<u>1961-1969</u>							
(1)	l_n^M	=	19.178	- 1.130 l_n^Y (2.897)*	- 0.327 $l_n^{Peec/Pw}$ (0.291)	0.646	1.17
(2)	$l_n^{M_{ex}}$	=	38.04	- 2.733 l_n^Y (7.010)***	+ 0.922 $l_n^{Peec/Pw}$ (0.825)	0.899	2.54
(3)	$l_n^{M_{int}}$	=	9.78	- 0.477 l_n^Y (1.040)	- 0.838 $l_n^{Peec/Pw}$ (0.739)	0.371	1.21

Table A-9. Fish and fish products (SITC: 03)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	M	=	- 174.28 + 0.151 Y (20.067)***	+	94.149 Peec/Pw (2.896)*	0.986	2.13
(2)	M _{ex}	=	- 143.93 + 0.114 Y (14.679)***	+	90.305 Peec/Pw (2.700)*	0.972	2.31
(3)	M _{int}	=	- 26.57 + 0.036 Y (19.102)***	+	110.382 Peec/Pw (0.619)	0.982	2.17
<u>1961-1969</u>							
(1)	M	=	11.25 + 0.110 Y (6.301)***	+	6.398 Peec/Pw (0.148)	0.973	1.72
(2)	M _{ex}	=	- 107.15 + 0.127 Yr (3.403)**	+	13.292 Peec/Pw (0.269)	0.935	1.27
(3)	M _{int}	=	- 34.08 + 0.0463 Y (7.948)***	-	18.096 Peec/Pw (1.245)	0.979	1.89

*The coefficient is significant at the 10% level.

**The coefficient is significant at the 5% level.

***The coefficient is significant at the 1% level.

Table A-9. (Continued)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	$l_n M$	=	- 12.357 +	$1.455 l_n Y$ (20.611)***	+ $0.495 l_n Peec/Pw$ (2.540)* ⁿ	0.988	2.10
(2)	$l_n M_{ex}$	=	- 11.536 +	$1.367 l_n Y$ (14.407)***	+ $0.663 l_n Peec/Pw$ (2.533)* ⁿ	0.973	2.37
(3)	$l_n M_{int}$	=	- 41.69 +	$3.697 l_n Y_r$ (13.857)***	+ $0.245 l_n Peec/Pw$ (2.160)	0.960	2.40
<u>1961-1969</u>							
(1)	$l_n M$	=	- 6.904 +	$1.012 l_n Y$ (6.727)***	- $0.217 l_n Peec/Pw$ (0.113)	0.981	1.72
(2)	$l_n M_{ex}$	=	- 4.432 +	$0.793 l_n Y$ (3.432)**	+ $0.799 l_n Peec/Pw$ (0.328)	0.930	1.29
(3)	$l_n M_{int}$	=	- 33.687 +	$3.040 l_n Y$ (9.759)***	- $0.359 l_n Peec/Pw$ (1.919)	0.984	1.84

Table A-10. Wheat (SITC: 041)

							\bar{R}^2	D.W.
<u>1953-1961</u>								
(1)	M	=	703.72	-	0.118 Ypc (1.229)	-	126.524 Peec/Pw - 0.083 Δ ST (0.871) (5.971)***	0.908 1.69
(2)	M _{ex}	=	628.29	-	0.178 Ypc (1.582)	-	43.185 Peec/Pw - 0.087 Δ ST (0.253) (5.330)***	0.877 1.44
(3)	M _{int}	=	47.31	+	0.459 Yr (1.978)	-	72.185 Peec/Pw (1.664)	0.441 1.31
<u>1961-1969</u>								
(1)	M	=	398.41	+	0.672 Ypc (3.347)**	-	195.614 Peec/Pw - 1044.30 Pb/Pw (1.832) (1.841)	0.601 1.55
(2)	M _{ex}	=	877.957	+	0.099 Ypc (0.898)	-	102.076 Peec/Pw - 679.98 Pb/Pw (1.736) (2.177)	0.628 2.24
(3)	M _{int}	=	- 670.29	+	0.507 Ypc (3.948)***	-	89.25 Peec/Pw (1.137)	0.777 1.72

*The coefficient is significant at the 10% level.

**The coefficient is significant at the 5% level.

***The coefficient is significant at the 1% level.

Table A-10. (Continued)

										\bar{R}^2	D.W.
<u>1953-1961</u>											
(1)	1_n^M	=	13.87	-	$0.631 \ 1_n^{Ypc}$ (2.244)	-	$0.562 \ 1_n^{Peec/Pw}$ (1.250)	-	$0.429 \ 1_n^{\Delta ST}$ (7.852)***	0.944	1.97
(2)	$1_n^{M_{ex}}$	=	21.53	-	$0.952 \ 1_n^{Yr}$ (2.657)* ⁿ	-	$0.614 \ 1_n^{Peec/Pw}$ (1.334)	-	$0.516 \ 1_n^{\Delta ST}$ (7.268)***	0.933	1.99
(3)	$1_n^{M_{int}}$	=	- 41.62	+	$3.570 \ 1_n^{Yr}$ (2.756)* ⁿ	-	$3.476 \ 1_n^{Peec/Pw}$ (2.101)			0.472	2.02
<u>1961-1969</u>											
(1)	1_n^M	=	- 16.54	+	$3.014 \ 1_n^{Ypc}$ (3.101)**	-	$0.893 \ 1_n^{Peec/Pw}$ (1.816)			0.557	0.80
(2)	$1_n^{M_{ex}}$	=	14.77	-	$1.086 \ 1_n^{Yr}$ (1.409)	-	$0.540 \ 1_n^{Peec/Pw}$ (0.270)	-	$0.021 \ 1_n^{\Delta ST}$ (0.364)	0.434	0.94
(3)	$1_n^{M_{int}}$	=	- 62.84	+	$5.332 \ 1_n^{Yr}$ (4.039)***	+	$0.195 \ 1_n^{Peec/Pw}$ (0.204)			0.878	1.18

Table A-11. Rice (SITC: 042)

							\bar{R}^2	D.W.	
<u>1953-1961</u>									
(1)	M	=	79.19	+	0.0025 Ypc (0.550)	- 43.747 Peec/Pw (2.494)*	- 0.034 ΔST (2.497)*	0.483	2.33
(2)	M _{ex}	=	20.57	-	0.024 Yr (2.669)*	- 37.724 Peec/Pw (0.804)	- 0.039 ΔST (1.042)	0.439	2.09
(3)	M _{int}	=	59.70	-	0.022 Yr (2.669)*	- 7.925 Peec/Pw (0.242)		0.479	1.89
<u>1961-1969</u>									
(1)	M	=	- 36.73	+	0.0054 Yr (2.182)	+ 74.935 Peec/Pw (5.436)***		0.894	3.03
(2)	M _{ex}	=	- 4.94	+	0.0067 Yr (2.680)*	+ 30.735 Peec/Pw (2.171)		0.758	2.34
(3)	M _{int}	=	- 31.79	-	0.0014 Yr (0.791)	+ 44.200 Peec/Pw (4.590)***		0.768	2.09

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-11. (Continued)

					\bar{R}^2	D.W.
<u>1953-1961</u>						
(1)	$l_n M$	=	4.43	- 0.043 $l_n Yr$ (0.207)	- 0.912 $l_n Peec/Pw$ (1.883)	0.445 2.35
(2)	$l_n M_{ex}$	=	- 17.33	+ 1.707 $l_n Yr$ (2.680)*	- 0.617 $l_n Peec/Pw$ (0.380)	0.479 2.21
(3)	$l_n M_{int}$	=	53.71	- 4.238 $l_n Yr$ (2.415)*	+ 1.022 $l_n Peec/Pw$ (0.320)	0.445 2.98
<u>1961-1969</u>						
(1)	$l_n M$	=	1.75	+ 0.176 $l_n Yr$ (2.060)	+ 1.448 $l_n Peec/Pw$ (5.311)***	0.859 2.35
(2)	$l_n M_{ex}$	=	- 0.05	+ 0.306 $l_n Yr$ (3.306)**	+ 0.782 $l_n Peec/Pw$ (2.654)*	0.782 2.19
(3)	$l_n M_{int}$	=	6.68	- 0.375 $l_n Yr$ (1.032)	+ 4.665 $l_n Peec/Pw$ (4.033)***	0.693 2.96

Table A-12. Barley (SITC: 043)

							\overline{R}^2	D.W.	
<u>1953-1961</u>									
(1)	M	=	32.43	+	0.829 Yr (2.730)*	- 28.313 Peec/Pw (0.939)	+ 0.147 Pb/Pw (3.009)*	0.676	1.94
(2)	M _{ex}	=	138.72	-	0.480 Yr (2.444)*	+ 55.277 Peec/Pw (2.876)*		0.543	1.90
(3)	M _{int}	=	- 96.93	+	0.150 Yr (3.779)***	- 105.015 Peec/Pw (2.785)		0.667	1.88
<u>1961-1969</u>									
(1)	M	=	85.736	+	0.970 Yr (3.407)**	- 79.217 Peec/Pw (1.345)		0.613	2.04
(2)	M _{ex}	=	261.86	-	0.585 Ypc (1.052)	- 45.452 Peec/Pw (0.380)	+ 0.029 ΔST (1.454)	0.401	1.89
(3)	M _{int}	=	- 191.163	+	0.255 Ypc (15.646)***	- 45.673 Peec/Pw (2.543)*		0.973	2.57

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-12. (Continued)

				\bar{R}^2	D.W.
<u>1953-1961</u>					
(1)	l_n^M	$= -10.93 + 1.330 l_n^{Yr} - 0.537 l_n^{Peec/Pw}$ (2.384)* ⁿ (1.224)		0.423	2.32
(2)	$l_n^{M_{ex}}$	$= 13.915 - 0.767 l_n^{Yr} + 0.681 l_n^{Peec/Pw}$ (2.506)* ⁿ (2.828)* ⁿ		0.535	1.99
(3)	$l_n^{M_{int}}$	$= -163.55 + 13.839 l_n^{Yr} - 5.652 l_n^{Peec/Pw}$ (4.846)*** (2.513)* ⁿ		0.774	1.96
<u>1961-1969</u>					
(1)	l_n^M	$= -4.54 + 0.814 l_n^{Yr} - 0.802 l_n^{Peec/Pw}$ (2.847)* ⁿ (0.256)		0.577	1.86
(2)	$l_n^{M_{ex}}$	$= 33.25 - 2.086 l_n^{Yr} - 2.446 l_n^{Peec/Pw}$ (1.374) (0.885)		0.349	2.07
(3)	$l_n^{M_{int}}$	$= -44.37 + 3.952 l_n^{Yr} - 1.087 l_n^{Peec/Pw}$ (14.163)*** (2.788)* ⁿ		0.968	1.61

Table A-13. Maize (SITC: 044)

					\bar{R}^2	D.W.
<u>1953-1961</u>						
(1)	M	=	- 5.5° + 0.322 Ypc (9.853)***	- 152.277 Peec/Pw (2.834)*	0.934	3.07
(2)	M _{ex}	=	- 24.36 + 0.283 Ypc (8.482)***	- 109.063 Peec/Pw (1.993)	0.920	1.09
(3)	M _{int}	=	20.64 + 0.365 Ypc (5.442)***	- 43.195 Peec/Pw (3.924)***	0.853	2.11
<u>1961-1969</u>						
(1)	M	=	-368.87 + 0.520 Yr (2.656)*	- 326.256 Peec/Pw (1.095)	0.624	1.18
(2)	M _{ex}	=	-169.69 + 0.350 Yr (1.849)	- 192.333 Peec/Pw (0.671)	0.451	1.00
(3)	M _{int}	=	-202.98 + 0.166 Yr (6.925)***	- 119.989 Peec/Pw (3.265)**	0.921	3.14

*The coefficient is significant at the 10% level.

**The coefficient is significant at the 5% level.

***The coefficient is significant at the 1% level.

Table A-13. (Continued)

							\bar{R}^2	D.W.
<u>1953-1961</u>								
(1)	l_n^M	=	- 8.27	+	1.243 $l_n Y$	- 0.981 $l_n^{Peec/Pw}$	0.920	3.20
(2)	$l_n^{M_{ex}}$	=	- 6.92	+	1.038 $l_n Y$ (5.298)***	- 1.344 $l_n^{Peec/Pw}$ (2.927)* ⁿ	0.909	3.30
(3)	$l_n^{M_{int}}$	=	- 99.49	+	8.245 $l_n Y_r$ (5.165)***	- 9.655 $l_n^{Peec/Pw}$ (4.128)***	0.821	3.18
<u>1961-1969</u>								
(1)	l_n^M	=	- 14.92	+	1.722 $l_n Y$ (3.001)**	- 0.969 $l_n^{Peec/Pw}$ (1.039)	0.707	1.19
(2)	$l_n^{M_{ex}}$	=	- 13.15	+	1.519 $l_n Y$ (2.529)* ⁿ	- 1.332 $l_n^{Peec/Pw}$ (1.243)	0.558	1.17
(3)	$l_n^{M_{int}}$	=	- 127.85	+	10.168 $l_n Y$ (4.117)***	- 4.368 $l_n^{Peec/Pw}$ (1.894)	0.823	3.22

Table A-14. Other cereals and preparations (SITC: 045, 046, 047, 048)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	M	=	- 162.91	+ 0.190 Ypc (2.787)*	+ 48.217 Peec/Pw (0.669)	0.724	1.86
(2)	M _{ex}	=	- 51.90	+ 0.085 Ypc (1.368)	+ 47.145 Peec/Pw (0.758)	0.441	2.02
(3)	M _{int}	=	- 111.00	+ 0.109 Ypc (5.978)***	+ 1.072 Peec/Pw (0.056)	0.902	2.08
<u>1961-1969</u>							
(1)	M	=	- 113.40	+ 0.055 Yr (1.764)	+ 115.983 Peec/Pw (1.030)	0.470	1.73
(2)	M _{ex}	=	3.83	- 0.040 Yr (0.956)	+ 143.970 Peec/Pw (0.967)	0.685	1.68
(3)	M _{int}	=	358.34	+ 0.095 Y (0.598)	- 149.634 Peec/Pw (-0.810)	0.644	2.06

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-14. (Continued)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	$l_n M$	=	- 5.554 + 1.461 $l_n Y_{pc}$ + 0.351 $l_n Peec/Pw$			0.771	2.14
			(3.190)**	(0.544)			
(2)	$l_n M_{ex}$	=	11.36 - 0.682 $l_n Y_r$ + 2.589 $l_n Peec/Pw$ + 0.072 $l_n \Delta ST$			0.645	1.72
			(1.020)	(2.937)*	(2.510)*		
(3)	$l_n M_{int}$	=	- 26.71 + 2.480 $l_n Y$ + 0.792 $l_n Peec/Pw$			0.853	2.09
			(4.434)***	(0.621)			
<u>1961-1969</u>							
(1)	$l_n M$	=	0.209 + 0.580 $l_n Y_r$ + 1.184 $l_n Peec/Pw$			0.467	1.98
			(1.725)	(1.508)			
(2)	$l_n M_{ex}$	=	11.27 - 0.999 $l_n Y_r$ + 2.712 $l_n Peec/Pw$			0.694	1.52
			(1.264)	(1.469)			
(3)	$l_n M_{int}$	=	8.68 - 0.085 $l_n Y$ - 4.867 $l_n Peec/Pw$			0.377	1.58
			(0.639)	(1.806)			

Table A-15. Fruits and vegetables (SITC: 05)

					\bar{R}^2	D.W.
<u>1953-1961</u>						
(1)	M	= - 239.30	+ 0.806 Y (11.452)***	- 25.343 Peec/Pw (0.370)	0.977	1.20
(2)	M _{ex}	= - 27.696	+ 0.494 Y (6.483)***	- 43.800 Peec/Pw (0.590)	0.936	1.46
(3)	M _{int}	= - 208.01	+ 0.308 Y (8.242)***	+ 17.874 Peec/Pw (0.496)	0.950	1.67
<u>1961-1969</u>						
(1)	M	= - 535.51	+ 0.458 Y (5.523)***	- 0.382 Peec/Pw (0.003)	0.839	1.38
(2)	M _{ex}	= - 70.53	+ 0.440 Yr (3.978)***	+ 19.985 Peec/Pw (0.186)	0.709	1.12
(3)	M _{int}	= - 450.26	+ 0.417 Yr (8.097)***	- 17.093 Peec/Pw (0.342)	0.923	1.68

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-15. (Continued)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	$l_n M$	=	- 8.92	+	$\frac{1.323 l_n Y}{(10.604)^{***}}$	- $\frac{0.532 l_n Peec/Pw}{(0.384)}$	0.975 1.13
(2)	$l_n M_{ex}$	=	- 7.97	+	$\frac{1.215 l_n Y}{(6.707)^{***}}$	- $\frac{0.105 l_n Peec/Pw}{(0.520)}$	0.944 1.29
(3)	$l_n M_{int}$	=	- 12.73	+	$\frac{1.539 l_n Y}{(8.582)^{***}}$	+ $\frac{0.051 l_n Peec/Pw}{(0.253)}$	0.959 1.64
<u>1961-1969</u>							
(1)	$l_n M$	=	- 2.07	+	$\frac{0.762 l_n Y}{(6.444)^{***}}$	+ $\frac{0.821 l_n Peec/Pw}{(0.068)}$	0.872 1.66
(2)	$l_n M_{ex}$	=	- 0.837	+	$\frac{0.628 l_n Y}{(4.789)^{***}}$	+ $\frac{0.311 l_n Peec/Pw}{(0.232)}$	0.778 1.27
(3)	$l_n M_{int}$	=	- 5.95	+	$\frac{0.991 l_n Y}{(7.567)^{***}}$	- $\frac{0.023 l_n Peec/Pw}{(0.171)}$	0.908 1.48

Table A-16. Feed-stuffs (SITC: 081)

							\bar{R}^2	D.W.
<u>1953-1961</u>								
(1)	M	=	- 195.77 +	0.174 Y (5.186)***	+ 80.115 Peec/Pw (1.824)		0.887	2.21
(2)	M _{ex}	=	- 170.40 +	0.138 Y (4.437)***	+ 69.178 Peec/Pw (1.701)		0.885	1.97
(3)	M _{int}	=	- 60.69 +	0.077 Ypc (3.889)***	+ 54.836 Peec/Pw (0.414)		0.781	1.82
<u>1961-1969</u>								
(1)	M	=	- 296.98 +	0.299 Y (12.090)***	+ 5.391 Peec/Pw (0.051)		0.955	1.55
(2)	M _{ex}	=	- 199.78 +	0.231 Y (8.149)***	+ 2.059 Peec/Pw (0.009)		0.905	1.34
(3)	M _{int}	=	- 98.18 +	0.067 Y (10.404)***	+ 7.338 Peec/Pw (0.272)		0.939	1.75

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-16. (Continued)

							\bar{R}^2	D.W.
<u>1953-1961</u>								
(1)	1_n^M	=	-	12.64 +	$1.482 \ 1_n^Y$ (5.681)***	+ $0.397 \ 1_n^{\text{Peec/Pw}}$ (1.252)	0.892	2.20
(2)	$1_n^{M_{\text{ex}}}$	=	-	13.64 +	$1.540 \ 1_n^Y$ (4.808)***	+ $0.463 \ 1_n^{\text{Peec/Pw}}$ (1.192)	0.860	1.92
(3)	$1_n^{M_{\text{int}}}$	=	-	28.28 +	$2.624 \ 1_n^{Yr}$ (3.498)**	+ $0.263 \ 1_n^{\text{Peec/Pw}}$ (0.558)	0.711	1.88
<u>1961-1969</u>								
(1)	1_n^M	=	-	14.17 +	$1.618 \ 1_n^Y$ (11.056)***	+ $0.294 \ 1_n^{\text{Peec/Pw}}$ (0.837)	0.943	1.23
(2)	$1_n^{M_{\text{ex}}}$	=	-	14.51 +	$1.623 \ 1_n^Y$ (7.993)***	+ $0.403 \ 1_n^{\text{Peec/Pw}}$ (0.827)	0.894	1.21
(3)	$1_n^{M_{\text{int}}}$	=	-	30.84 +	$2.838 \ 1_n^{Yr}$ (13.571)***	+ $0.120 \ 1_n^{\text{Peec/Pw}}$ (0.422)	0.965	1.71

Table A-17. Hides, skins and furs (SITC: 211, 212)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	M	=	646.45	+ 0.194 Y (9.635)***	- 520.748 Peec/Pw (2.961)*	0.936	2.19
(2)	M _{ex}	=	540.91	+ 0.156 Y (8.187)***	- 418.403 Peec/Pw (2.514)*	0.914	2.58
(3)	M _{int}	=	709.79	+ 0.339 Y (5.206)***	- 706.368 Peec/Pw (1.957)	0.867	2.39
<u>1961-1969</u>							
(1)	M	=	335.31	+ 0.880 Y (3.889)***	- 105.606 Peec/Pw (0.558)	0.655	2.54
(2)	M _{ex}	=	236.63	+ 0.703 Y (3.326)**	- 43.334 Peec/Pw (0.240)	0.557	2.46
(3)	M _{int}	=	435.33	+ 0.176 Y (3.479)**	- 190.621 Peec/Pw (0.563)	0.668	1.82

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-17. (Continued)

							\bar{R}^2	D.W.
<u>1953-1961</u>								
(1)	$1_n M$	= -	5.605	+	0.986 $1_n Y$ (8.699)***	- 2.191 1_n Peec/Pw (2.732)* ⁿ	0.922	2.04
(2)	$1_n M_{ex}$	= -	4.904	+	0.913 $1_n Y$ (7.671)***	- 2.024 1_n Peec/Pw (2.403)* ⁿ	0.901	2.42
(3)	$1_n M_{int}$	= -	12.199	+	2.254 $1_n Y_{pc}$ (5.133)***	- 1.933 1_n Peec/Pw (1.671) ⁿ	0.849	1.86
<u>1961-1969</u>								
(1)	$1_n M$	= -	0.575	+	0.538 $1_n Y$ (3.810)***	- 0.279 1_n Peec/Pw (0.572) ⁿ	0.637	2.51
(2)	$1_n M_{ex}$	= -	0.419	+	0.509 $1_n Y$ (3.244)**	- 0.113 1_n Peec/Pw (0.208) ⁿ	0.533	2.45
(3)	$1_n M_{int}$	= -	7.044	+	1.5207 $1_n Y_{pc}$ (3.362)**	- 0.394 1_n Peec/Pw (0.674) ⁿ	0.651	2.37

Table A-18. Wood, cork and pulp (SITC: 24, 251)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	M	= - 969.64	+ 1.088 Yr (9.166)***	- 331.657 Peec/Pw (0.574)		0.946	1.41
(2)	M _{ex}	= - 923.99	+ 0.947 Yr (10.348)***	- 115.786 Peec/Pw (0.260)		0.960	1.38
(3)	M _{int}	= - 45.64	+ 0.141 Yr (2.899)*	- 215.871 Peec/Pw (0.913)		0.514	2.03
<u>1961-1969</u>							
(1)	M	= - 2544.21	+ 1.630 Ypc (2.782)*	+ 1350.106 Peec/Pw (1.243)		0.466	2.11
(2)	M _{ex}	= - 2525.99	+ 1.545 Ypc (2.726)*	+ 1359.177 Peec/Pw (1.294)		0.444	2.09
(3)	M _{int}	= - 1821.80	+ 8.475 Ypc (4.267)***	- 907.144 Peec/Pw (0.246)		0.832	1.87

*The coefficient is significant at the 10% level.
 **The coefficient is significant at the 5% level.
 ***The coefficient is significant at the 1% level.

Table A-18. (Continued)

						\bar{R}^2	D.W.
<u>1953-1961</u>							
(1)	l_n^M	=	- 22.54	+	$2.403 l_n^{Yr}$ (7.947)***	- $0.226 l_n^{Peec/Pw}$ (0.382)	0.931 1.31
(2)	$l_n^{M_{ex}}$	=	- 20.96	+	$2.270 l_n^{Yr}$ (8.243)***	- $0.0728 l_n^{Peec/Pw}$ (0.136)	0.938 2.07
(3)	$l_n^{M_{int}}$	=	- 51.51	+	$4.490 l_n^{Yr}$ (2.423)*	- $3.427 l_n^{Peec/Pw}$ (0.893)	0.375 2.02
<u>1961-1969</u>							
(1)	l_n^M	=	- 10.11	+	$1.399 l_n^{Yr}$ (2.797)* ⁿ	+ $0.501 l_n^{Peec/Pw}$ (0.991)	0.481 1.27
(2)	$l_n^{M_{ex}}$	=	- 10.72	+	$1.441 l_n^{Yr}$ (2.766)* ⁿ	+ $0.554 l_n^{Peec/Pw}$ (1.052)	0.464 2.08
(3)	$l_n^{M_{int}}$	=	- 6.577	+	$0.909 l_n^{Yr}$ (3.891)***	- $0.138 l_n^{Peec/Pw}$ (0.584)	0.804 2.14

DATA SOURCES

Data for our income variables were drawn from O.E.C.D., "National Accounts Statistics: 1953-1969," Paris, 1971. Data on prices were taken from several issues of the F.A.O., "Monthly Bulletin of Agricultural Economics and Statistics" and various EEC publications. Finally, changes in stocks were obtained from O.E.C.D., "Food Consumption Statistics," 1968 and 1970.

Country Breakdown Adopted in the Preparation of
the World Trade Matrices for Temperate Zone Products:

1. Belgium-Luxembourg
2. Netherlands
3. Germany
4. France
5. Italy
6. Total EEC
7. Associated to EEC: Greece, Turkey
8. United Kingdom
9. Other EFTA
10. Total EFTA
11. U.S.A.
12. Australia, New Zealand, S. Africa
13. Canada
14. Japan
15. Other Europe
16. Communist Block (including China)
17. Associated L.D.C.'s to the EEC^a
18. Latin America
19. Africa
20. Asia, Middle East
21. Algeria, Tunisia, Morocco
22. Other L.D.C.'s
23. Total world

^aThe Associated L.D.C.'s to the EEC by 1969 included:

1. (EAMA): African States and Madagascar Associated with the EEC (The Yaoundé Convention, 1964):

Mauritania, Mali, Upper Volta, Niger, Senegal, Ivory Coast, Togo, Dahomey, Cameroon, Chad, Central African Republic, Gabon, Congo (Brazzaville), Congo (Kinshasa), Rwanda, Burundi, Somalia, Madagascar.

2. (TOM): Overseas Territories Associated with the EEC:

Curacao, Aruba, Suriname, French Territory of Afars-Issas, Comoro Islands, St. Pierre and Miquelon, New Caledonia, French Polynesia.

3. (DOM): Overseas Departments of EEC Countries:

Reunion, Guadelupe, Martinique, French Guiana.

XI. APPENDIX B:

**THE AGRICULTURAL SUB-MODEL OF THE EEC;
THE STRUCTURAL MODEL AND THE REGRESSION ESTIMATES**

The Structural Model

$$(1) \quad Y = V_A + V_{NA}$$

$$(2) \quad E = E_A + E_{NA}$$

$$(3) \quad V_A = \alpha_0 + \alpha_1 E_A, \quad \alpha_1 < 0$$

$$(4) \quad V_{NA} = \beta_0 + \beta_1 E_{NA} + \beta_2 I_{NA/A}, \quad \beta_1, \beta_2 > 0$$

$$(5) \quad E_A = \gamma_0 + \gamma_1 Q_A, \quad \gamma_1 < 0$$

$$(6) \quad Q_A = \delta_0 + \delta_1 P_A + \delta_2 I_{NA/A}, \quad \delta_1, \delta_2 > 0$$

Where:

Y = Gross domestic product per capita

V_A = Value added in agriculture per capita

V_{NA} = Value added in the non-agricultural sector per capita

E = Total employment ($E = E_A + E_{NA}$)

E_A = Agricultural employment

E_{NA} = Non-agricultural employment

Q_A = Total agricultural output, net of imported feeding stuffs and store cattle

$I_{NA/A}$ = The ratio of gross fixed capital formation in the non-agricultural sector relative to agriculture

P_A = Index of prices of agricultural commodities

Table B-1. Summary of the regression estimates for the EEC agricultural sub-model ("t" values in parentheses)

dependent variable	intercept	E_A	E_{NA}	$I_{NA/A}$	Q_A	P_A	R^2	D.W.
<u>A. Time Period = 1953-1969</u>								
V_A	148.93	-2.675 (10.501)					0.88	1.45
V_{NA}	-671.65		23.372 (1.310)	32.452 (1.150)			0.85	1.07
E_A	36.06				-0.183 (16.050)		0.94	2.10
Q_A	4.30			2.202 (3.094)		0.683 (3.524)	0.94	1.65
<u>B. Time Period = 1953-1961</u>								
V_A	150.21	-2.736 (3.508)					0.64	1.34
V_{NA}	-9.62		20.474 (2.217)	0.441 (0.027)			0.82	1.34
E_A	37.93				-0.199 (4.575)		0.75	1.55
Q_A	75.39			2.741 (2.989)		-0.145 (0.242)	0.78	1.84

Table B-1. (Continued)

dependent variable	intercept	E_A	E_{NA}	$I_{NA/A}$	Q_A	P_A	R^2	D.W.
<u>C. Time Period = 1962-1969</u>								
V_A	160.93	-3.719 (4.579)					0.78	1.47
V_{NA}	-4906.86		86.562 (6.038)	50.260 (2.085)			0.96	1.02
E_A	29.28				-0.132 (6.083)		0.86	1.34
Q_A	-89.79			8.215 (3.790)		0.365 (1.550)	0.90	1.86

Table B-2. Summary of the individual country equation estimates (1953-1969)

dependent variable	intercept	E_A	E_{NA}	$I_{NA/A}$	Q_A	P_A	R^2	D.W.
<u>A. France</u>								
V_A	302.05	-2.077 (2.080)					0.96	1.61
V_{NA}	-1927.70		19.016 (5.761)	1.074 (2.610)			0.95	1.00
E_A	221.31				-1.280 (8.049)		0.81	1.29
Q_A	75.74			0.268 (4.854)		0.167 (2.692)	0.89	2.35
<u>B. Italy</u>								
V_A	234.06	-1.452 (10.022)					0.87	0.79
V_{NA}	-239.03		-0.704 (0.567)	3.491 (5.664)			0.83	0.96
E_A	245.27				-1.520 (7.767)		0.81	1.80
Q_A	80.60			0.236 (2.769)		0.170 (2.144)	0.80	1.74
<u>C. Belgium-Luxembourg</u>								
V_A	182.83	-0.845 (12.028)					0.91	1.54

Table B-2. (Continued)

dependent variable	intercept	E_A	E_{NA}	$I_{NA/A}$	Q_A	P_A	R^2	D.W.
<u>C. Belgium-Luxembourg (continued)</u>								
V_{NA}	-1091.10		11.683 (2.417)	0.177 (0.512)			0.80	0.50
E_A	210.92				-1.258 (3.206)		0.41	0.51
Q_A	89.13			0.104 (1.851)		0.116 (1.261)	0.53	1.12
<u>D. Germany</u>								
V_A	161.72	-0.632 (16.733)					0.95	1.97
V_{NA}	-752.10		8.788 (2.120)				0.23	0.08
E_A	224.51				-1.386 (4.120)		0.54	1.18
Q_A	104.74					0.252 (3.619)	0.47	1.81
<u>E. Netherlands</u>								
V_A	241.91	-1.461 (12.209)					0.91	1.32
V_{NA}	-1956.8		20.316 (5.489)	0.946 (0.118)			0.71	0.34
E_A	256.78				-1.689 (4.035)		0.53	0.89
Q_A	97.15			0.598 (0.512)		0.162 (2.519)	0.37	1.79

Data Sources

Gross Domestic Product, value added in agriculture and in non-agriculture and the ratio of gross fixed capital formation in the non-agricultural sector relative to agriculture were obtained from the O.E.C.D. publication: "National Accounts of O.E.C.D. Countries: 1953-1969." All values are in real terms evaluated in 1963 prices. The employment statistics were taken from the O.E.C.D. "Labor Force Statistics." Agricultural output and price statistics were computed from various O.E.C.D., U.S.D.A. and U.N. publications.

XII. APPENDIX C:

TREATY ESTABLISHING THE EUROPEAN ECONOMIC COMMUNITY:

THE COMMON AGRICULTURAL POLICY

ARTICLE 39

1. The common agricultural policy shall have as its objectives:
 - (a) to increase agricultural productivity by developing technical progress and by ensuring the rational development of agricultural production and the optimum utilization of the factors of production, particularly labour;
 - (b) to ensure thereby a fair standard of living for the agricultural population, particularly by the increasing of the individual earnings of persons engaged in agriculture;
 - (c) to stabilize markets;
 - (d) to guarantee regular supplies; and
 - (e) to ensure reasonable prices in supplies to consumers.
2. In working out the common agricultural policy and the special methods which it may involve, due account shall be taken of:
 - (a) the particular character of agricultural activities, arising from the social structure of agriculture and from structural and natural disparities between the various agricultural regions;
 - (b) the need to make the appropriate adjustments gradually; and
 - (c) the fact that in Member States agriculture constitutes a sector which is closely linked with the economy as a whole.

ARTICLE 40

1. Member States shall gradually develop the common agricultural policy during the transitional period and shall establish it not later than at the end of that period.
2. With a view to achieving the objectives set out in Article 39, a common organization of agricultural markets shall be effected. This organization shall take one of the following forms according to the products concerned:
 - (a) common rules concerning competition;

- (b) compulsory co-ordination of the various national market organizations; or
 - (c) a European market organisation.
3. The common organization in one of the forms mentioned in paragraph 2 may comprise all measures necessary to achieve the objectives set out in Article 39, in particular, price controls, subsidies as to the production and marketing of various products, arrangements for stockpiling and carry-forward, and common machinery for stabilising importation or exportation.
- The organization shall confine itself to pursuing the objectives set out in Article 39 and shall exclude any discrimination between producers or consumers within the Community.
- A common price policy, if any, shall be based on common criteria and on uniform methods of calculation.
4. In order to enable the common organization referred to in paragraph 2 to achieve its objectives, one or more agricultural orientation and guarantee funds may be established.

ARTICLE 41

In order to permit the achievement of the objectives set out in Article 39, provision may be made within the framework of the common agricultural policy for, inter alia:

- (a) an effective co-ordination of efforts undertaken in the spheres of occupational training, research and the popularization of rural economy, which may involve projects or institutions financed jointly; and
- (b) common action for the development of the consumption of certain products.

ARTICLE 42

The provisions of the Chapter relating to the rules of competition shall apply to the production of and trade in agricultural products only to the extent determined by the Council within the framework of the provisions and in accordance with the procedure laid down in Article 43, paragraphs 2 and 3, due account being taken of the objectives mentioned in Article 39.

The Council may, in particular, authorize the granting of aids:

- (a) for the protection of enterprises handicapped by structural or natural conditions; and
- (b) within the framework of economic development programmes.

ARTICLE 43

1. In order to formulate the guiding lines of a common agricultural policy, the Commission shall, upon the date of the entry into force of this Treaty, convene a conference of Member States, with a view to comparing their agricultural policies by drawing up, in particular, a statement of their resources and needs.
2. The Commission, taking due account of the work of the conference provided for in paragraph 1, shall, after consulting the Economic and Social Committee and within a period of two years after the date of the entry into force of this Treaty, submit proposals concerning the working out and putting into effect of the common agricultural policy, including the substitution of national organizations by one of the forms of common organization provided for in Article 40, paragraph 2, as well as concerning the putting into effect of the measures specially mentioned under this Title.

These proposals shall take due account of the interdependence of the agricultural questions raised under this Title.

The Council, acting during the first two stages by means of a unanimous vote and subsequently by means of a qualified majority vote on a proposal of the Commission and after the Assembly has been consulted, shall issue regulations or directives or take decisions, without prejudice to any recommendations which it may take.

3. The common organization provided for in Article 40, paragraph 2, may, under the conditions provided for in the preceding paragraph, be substituted for national market organizations by the Council acting by means of a qualified majority vote:
 - (a) if the common organization offers to Member States which are opposed to this measure and which possess a national organization of their own for the production concerned, equivalent guarantees regarding the employment and standard of living of the producers concerned, due account being taken of the time-factor in respect of possible adjustments and of necessary specializations; and

(b) if such organization ensures for exchanges within the Community conditions similar to those existing in a domestic market.

4. If a common organization is created for certain raw materials at a time when no common organization yet exists for the corresponding processed products, the raw materials concerned which are used for processed products destined for export to third countries may be imported from outside the Community.

ARTICLE 44

1. In the course of the transitional period and to the extent that the progressive abolition of customs duties and quantitative restrictions between Member States may result in prices likely to jeopardize the achievement of the objectives set out in Article 39, each Member State shall be permitted to apply to certain products, in a non-discriminatory manner and in substitution for quotas, to such an extent as shall not impede the expansion of the volume of trade provided for in Article 45, paragraph 2, a system of minimum prices below which imports may be:

temporarily suspended or reduced; or
made conditional on their price being above the minimum price fixed for the product concerned.

In the second case, the minimum prices shall not include customs duties.

2. The minimum prices shall not be such as to lead to a reduction of exchanges existing between Member States at the date of the entry into force of this Treaty and shall not be an obstacle to a progressive expansion of such exchanges. The minimum prices shall not be applied in such a manner as to be an obstacle to the development of a natural preference between the Member States.
3. Upon the entry into force of this Treaty, the Council, acting on a proposal of the Commission, shall determine objective criteria for the establishment of minimum price systems and for the fixing of such prices.

The criteria shall, in particular, take account of average national costs of production in the Member State applying the minimum price, of the situation of the various enterprises in relation to such costs and of the need for promoting both the progressive improvements of agricultural operations and the adjustments and specializations necessary within the Common Market.

The Commission shall also propose a procedure for revision of these criteria in order to take into account and accelerate technical progress and in order progressively to approximate prices within the Common Market.

These criteria and the procedure for revision shall be determined by means of unanimous vote of the Council in the course of the first three years after the date of the entry into force of this Treaty.

4. Until the Council's decision takes effect, Member States may fix minimum prices on condition that they previously communicate them to the Commission and to the other Member States in order to enable them to submit their comments.

As soon as the Council has taken its decision, Member States shall fix minimum prices on the basis of the criteria established under the conditions mentioned above.

The Council, acting by means of a qualified majority vote on a proposal of the Commission, may correct the decisions taken if they do not conform to the criteria so determined.

5. From the beginning of the third stage and in cases where it has not yet been possible in respect of certain products to establish the above objective criteria, the Council, acting by means of a qualified majority vote on a proposal of the Commission, may modify the minimum prices applied to these products.
6. At the expiry of the transitional period, a table of minimum prices still in force shall be drawn up. The Council, acting on a proposal of the Commission by means of a majority of nine votes in accordance with the weighting provided for in Article 148, paragraph 2, first sub-paragraph, shall determine the system to be applied within the framework of the common agricultural policy.

ARTICLE 45

1. Until the substitution of the national organization by one of the forms of common organization provided for in Article 40, paragraph 2, the development of exchanges in respect of products for which there exist in certain Member States:

provisions designed to guarantee to national producers a sale of their production, and
a need of imports,

shall be pursued by the conclusion of long-term agreements or contracts between exporting and importing Member States.

Such agreements or contracts shall be directed towards the progressive abolition of any discrimination in the application of these provisions to the various producers within the Community.

The conclusion of such agreements or contracts shall take place in the course of the first stage; due account shall be taken of the principle of reciprocity.

2. With regard to quantities, such agreements or contracts shall take as their basis the average volume of exchanges between Member States in the products concerned during the three years preceding the date of the entry into force of this Treaty and shall provide for an increase in that volume within the limit of existing requirements, due account being taken of traditional trade currents.

With regard to prices, such agreements or contracts shall enable producers to dispose of the agreed quantities at prices progressively approximating to those paid to national producers in the home market of the purchasing country.

This approximating of prices shall proceed as steadily as possible and shall be completed not later than at the end of the transitional period.

Prices shall be negotiated between the parties concerned within the framework of directives drawn up by the Commission for the implementation of the preceding two sub-paragraphs.

In the event of the first stage being extended, such agreements or contracts shall continue to be carried out under the conditions applicable at the end of the fourth year after the date of the entry into force of this Treaty, while the obligations to increase quantities and to approximate prices shall be suspended until entry on the second stage.

Member States shall avail themselves of any possibilities offered to them as a result of their legislative provisions, particularly as regards import policy, with a view to ensuring the conclusion and carrying out of these agreements or contracts.

3. To the extent that Member States require raw materials for the production of goods destined for export outside the Community in competition with producers in third countries, such agreements or contracts shall not be an obstacle to imports, for this purpose, of raw materials coming from third countries. This provision shall not apply if the

Council decides by means of a unanimous vote to grant the payments necessary to compensate, in respect of imports effected for this purpose on the basis of such agreements or contracts, for the excess price paid in comparison with the delivery prices of the same supplies obtained on the world market.

ARTICLE 46

Where in a Member State a product is the object of a national market organization or of any internal regulation with equivalent effect, either of which affects the competitive position of a similar production in another Member State, a countervailing charge on entry shall be applied by Member States on this product when it comes from the Member State where such organisation of regulation exists, unless that State levies a countervailing charge on exit.

The Commission shall fix the amount of these charges, to the extent necessary to re-establish the balance; it may also authorize recourse to other measures of which it shall determine the conditions and particulars.